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EDITORIAL NOTES.

With this, the December issue; the Eighth Volume of your JOURNAL is completed. When we began publishing there were many of our members who had grave doubts that even the first volume would be completed; but we are still here and the JOURNAL will probably continue to be issued long after the original doubts or the early struggles have been quite forgotten. If you would see the JOURNAL continue to grow and to improve as it ought to improve, then help to bring about that result. The JOURNAL is almost entirely just what the members of the Society make it. If they write better papers, if they contribute good suggestions, valuable case reports, scientific reviews or editorials of value, by just that much do they improve their own JOURNAL. There are a few (fortunately only a very, very few), captious critics who find little if anything in the JOURNAL to meet their approval. But they do not count; they seldom approve anything very much, unless it is their own work or something with which they have had to do. During the year just closed, more help and co-operation have been given to the editor than in any previous years; the Publication Committee has been more active in the work of securing scientific matter of value. To all of the various gentlemen who have helped, and especially to Dr. Lartigau and to Dr. Russ, the editor wishes to express his very sincere thanks. Criticize anything you see to criticize; help all you possibly can to make the JOURNAL bigger and better; but don't knock. Aimless knocking hurts everybody and does nobody any good.

In January the legislature will begin its sessions and we should carefully consider some things in advance of that event. There

THE NEXT LEGISLATURE.

always have been those who wish to break down the slight protection afforded the public by any sort of a decent medical law, and there doubtless always will be such; therefore, we may expect that bills will be introduced either creating a new medical law or emasculating the present one. Also, there may be attempts to create special licensing boards; similar bills have been introduced at every session. If it has not already been done, each and every man who has been elected to the legislature should have this matter carefully and fully explained to him before he goes to Sacramento; after he gets there the pressure of work makes it almost impossible for one to devote a great deal of time to the consideration of these questions. The medical law is a police regulation intended for the protection of the public; it is not intended for the protection of the medical profession and the Supreme Court has decided that it is not a law of that class. Special licensing boards mean only one thing—easy entrance into the practice of medicine for persons who can not or will not pass the required examination. The basis of the present law is sound and just; it requires that anyone of any school or sect must demonstrate that he knows enough of the make-up of the human body to do the minimum of harm. It does not favor any school or class but treats all alike in every particular. All bills creating new boards of examiners in any way should be defeated; all changes or amendments to the present law should be defeated. The time will come when we can establish a safe reciprocity with other states, but it has not yet arrived. The present law is not perfect, but it is about as good as anything we could get and it does furnish the public with reasonable protection against ignorance and greed. Explain these matters to our legislators before they go to Sacramento and get too busy to take time to think them over.

That is what we are trying to make the office of the State Society—a medical clearing house. A

A MEDICAL CLEARING HOUSE.

place where all the various lines of medical interest and activity in California will center. Practices for sale or exchange; locations wanted or open; offices to be shared; office attendants wanted; everything of that sort should find its way naturally to the office of the State Society. If the Society exists at all, it exists for the benefit of its members and the more benefit it can be to them, the more do they appreciate the Society, thus increasing its strength and its influence. Co-operation is the essential spirit of the Twentieth Century. Co-operate right here at home and thus, incidentally, do yourself some good; you never can tell when you may want a little co-operation. Help us to make the office of the Society useful in the way suggested and you will find, some day, that you have helped make for yourself a very useful institution.

The experimental and clinical demonstration of the destructive action of certain complex organic

ACTION OF

ATOXYL ON EYES.

arsenical compounds upon trypanosomes and spirochaetes has stimulated extensive studies of their effects in the human body under various conditions. While the beneficial clinical action of these substances cannot be denied experience has shown that their use is not entirely free from certain dangers. Atoxyl which is one of the earliest of these compounds introduced into practical medicine has been universally employed for some time and therefore has been best studied. Among a number of untoward symptoms noted following its use, blindness occupies a prominent place as shown by the interesting contribution recently made by Dr. Kurt Steindorff of Berlin (*Berliner Klinische Wochenschrift*, October 3, 1910). From a careful search of the literature he has been able to collect as many as 95 cases of disturbances of vision or actual blindness following the use of atoxyl. Judging from the case reports it would appear that the ocular disturbances are often preceded by other manifestations of intoxication, such as general malaise, more or less dizziness, headache, nausea or vomiting, colicky pains, deafness, lowering of the body temperature, and renal disorders.

The symptoms referable to the eyes consist of varying diminution of the sight with concentric diminution of the field of vision, more on the nasal than on the temporal side. The examination of the eye-grounds is at first negative with possibly the exception of some constriction of the retinal arteries and venous congestion. After a time usually a few weeks the papillae appear pale, and the condition progresses with considerable rapidity to complete optic atrophy, associated with augmenting dimness of vision until blindness is complete. The outlook is serious for stopping the drug does not appear to check the progress of the process nor does other treatment seem to have any effect for improvement.

The ocular symptoms are evidently not a result of the disease for which the drug was employed for in the conditions in which it was used ocular symptoms of this character are unusual. Chronic alcoholism predisposes to the development of the complication. On the other hand, an eye already the subject of disease often shows an increase in development of the original disorder. Thus Wassermann noted in some of his cases of tabetic optic atrophy rapid progress of the ocular lesion while the patients were under the influence of the drug. An analysis of the modes of administration in the cases in which these ocular manifestations were observed does not throw any light on the subject. However, it has been suggested by Beck that the patients in whom the more severe symptoms were noted, had received small daily doses without interval for a long time, or large doses at short intervals and that this may have had some influence in the production of the ocular disturbances. Conditions of age, sex, severity of the disease for which the drug was given, or whether the drug was administered beneath the skin, into the muscles or sub-arachnoid space do not appear to bear any relation

to the incidence of the unfortunate complication.

The pathology of the condition has not yet been fully investigated. Nonne, however, has reported the results of a microscopic study in one case. The retina was not examined but examination of the optic nerve showed symmetrical degeneration extending back to the chiasma. No inflammatory reaction was observed. Whether the anilin or arsenic constituent of the atoxyl molecule is responsible for the process is difficult to say, both substances in rare instances leading to eye disorders, usually, however, of the nature of an optic neuritis rather than primary atrophy as is the case with atoxyl.

With these important facts in mind greater care will have to be exercised in the use of this drug and probably of other more or less similar preparations. Thus arsacetin although much less toxic than atoxyl has also given rise to more or less similar symptoms to those following the use of the stronger and therapeutically more efficient atoxyl.

The editorial notes on advertising, which appeared in the October JOURNAL, have brought

A WORD ON ADVERTISING.

fourth a number of quite interesting letters from members, from advertisers and from other publications. We are making an effort to find out which advertisers are getting direct returns from their advertisements, and the result, so far, is remarkably gratifying. Certainly the letters thus far received are at least significant of one thing—more different kinds of people read such editorial notes than was supposed. But the advertising question and advertising in general have gone through a veritable revolution in the last few years, and if your JOURNAL did not start it, at least we were in at the start. The STATE JOURNAL was almost the first publication in this country to announce in its editorial columns the fact that it assumed responsibility for its advertisers. Of course, we have been "stung" occasionally, but in the main we have had clean pages and those who patronized our advertisers have had a square deal. The proprietary medicine question is now practically settled; only time is now necessary to make the work of the Council on Pharmacy and Chemistry complete and place all proprietary preparations where we shall know exactly what class each belongs in. The prominence of the manufacturer will have no weight as against the word of the Council; these preparations will stand or fall on the truth and not on what the manufacturer may say about them. The time for continuous adverse comment has gone; the time for judicious commendation has come, and we shall start the new year—and the new volume of the JOURNAL—with some words of that sort. Our advertisers are good; their preparations are good; they should be understood and supported and our readers should take a positive and personal interest in them.

The importance of the bacillus coli communis as a primary bacterial factor in the development of

ETIOLOGICAL FACTORS IN APPENDICITIS

appendicitis has been generally asserted by most writers upon the subject. To question at this late

date the accuracy of this belief may appear to many nothing short of anarchy; yet recent investigations touching upon the etiology of appendicitis have raised doubts in the mind of the critical observer as to the correctness of this generally accepted assumption. This relation of the bacillus coli communis to appendicitis had its origin in the results of early researches upon the bacterial flora of inflamed appendices, obtained either from operation sources or the post-mortem room. What ever the source of the material it is evident that the bulk of it represents well marked and well advanced lesions. Moreover, at the time much of this work was carried out bacteriological technique lacked the delicacy and refinements of modern methods; furthermore, most if not all of the earlier studies concerned themselves solely with aerobic conditions.

To the uncritical mind these points may seem unimportant in view of the fact that all the pioneer investigators concurred in the opinion that the colon bacillus was the most constant finding in inflamed appendices, but it may here suffice to point out that this organism has since been shown to easily overgrow primary but less hardy invaders. Since much of the investigated material has of necessity been from advanced cases of the disease one may clearly see the possibility for erroneous deductions. Working with material representing the very early stages of appendicitis and using cover-slip controls, later observers have found that the colon bacillus has usually been associated with other bacterial forms mainly streptococci, whereas the early investigators rarely observed them. On the other hand, the application of anaerobic methods, lamentably neglected in such studies, in the hands of a few recent workers has thrown a flood of light on the etiological importance of this class of micro-organisms in this disease. Thus Veillon and Zuber in an investigation of twenty-two specimens demonstrated anaerobic organisms in twenty-one; more recently Perrone, Lanz and Tavel, Grigoroff, and Gilbert and Lippmann have confirmed the findings of these observers. Veillon and Zuber were the first to point out the importance of anaerobic bacteria, particularly streptococci, as causative factors of gangrenous forms of appendicitis.

While one of the most promising fields in the study of appendicitis lies in studies bearing upon the anaerobic flora the history of the etiology does not end here. In 1901 Metchnikoff presented to the French Academy of Medicine the history of six appendiceal cases associated with intestinal worms. The administration of a vermifuge was followed by cure. Since this contribution which has opened new vistas into the pathogenesis of this condition Girard, Guinard, Kirmisson, Batut, Vallerio, Unterberber, Weinberg and others have recorded numerous instances of verminous appendicitis. The ascaris has been most commonly noted, the oxyuris and trichocephalus being less frequent.

The literature dealing with the pathogenesis of appendicitis is very large and is still growing, but the final word upon the subject still remains unsaid.

Many of its members look upon the preparation and presentation of an adequate scientific program

THE FUNCTIONS OF THE COUNTY MEDICAL SOCIETY

as the sole function of the County Society. Such a view is short-sighted in the extreme. The functions of the society are many and arise from (1) the relations of its members one to the other, (2) the relation of its members to the community. From the first set of relations arise the functions that arrange for exchange of experience, information, and clinical programs, and lays down rules for courteous and fair relationship between members in ethical codes, and means for enforcing the codes by committees of ethics.

A much neglected but essential function that also arises from this relationship of members, one to the other, is the encouragement of social intercourse. Without some machinery for bringing its members together in their lighter moods, the society fails in an important part of its duties. Luncheons, annual dinners, and an occasional smoker should be included in the society's plans as of equal importance with scientific programs. Many of the fogs engendered of jealousy and back-biting would fade under the sunny influence of understanding acquaintanceship. Solidarity and power can only come to a society by the cultivation of a generous knowledge, and appreciation of one another amongst its members.

Neglected as this function of the society usually is, it is far less in abeyance than the functions that arise from the relations of the members to the community. These should receive equal thought with those of the first group; because the dignity of the profession depends on its assuming and fulfilling its duties to the community, and the living and comfort of most of the society's individual members, especially in a city, depend on the society's willingness and ability to make the community deal intelligently and fairly with the society's constituents. Emphatically, it should be the policy to take active interest in matters pertaining to the public health, without in any way entering into partisanship, to uphold and commend good work done by the departments of health, and equally to condemn any steps that such departments might take detrimental to the community's good. Equally it should be the policy of the society to heighten the regard of the community for the attainments of our professions by inaugurating through newspapers and by popular lectures, education in what medicine has done, and is daily doing to alleviate suffering, and to aid humanity. Further the society should provide some practical means of enforcing the community's obligations to its individual members. There should be some definite plan devised and put into action to prevent the abuse of club and hospital contract practice, and action should be taken by every county society to insist that patients who contract for physicians members' services, if able, should pay for them, and render it impossible for the wilful swindler to steal from doctors one after another their time and labor.

If our county societies realized and practiced only this few of many legitimate functions, it would not be long before the membership would include all the practitioners of their community.

ORIGINAL ARTICLES

SYMPOSIUM ON THE TONSILS.

Fortieth Annual Session, Medical Society of the State of California.

THE ENUCLEATION OF THE TONSIL FROM THE STANDPOINT OF THE GENERAL MEDICAL MAN.

By LANGLEY PORTER, M. D., San Francisco.

In the pediatric clinics of San Francisco so great a proportion of the children have abnormal tonsils that there is a distinct sense of pleasure when the faucial view reveals an entirely healthy mucous membrane, and what is true of the clinic patients is true, in only a less degree, of those encountered in private practice.

It is difficult to establish what is a normal tonsil at various ages, and out of many tonsils examined there are few which do not show traces of old inflammation or of hypertrophy. But one can perhaps go so far as to say that for the first four or five years of life normal tonsils are globular, deeply imbedded structures, and that after this the deeper portions tend to atrophy.

The facts being such, the problems that lie before the practitioner are (1) to decide what type of chronically diseased tonsils can be treated medically with a fair prospect of success. (2) When he finds it necessary to transfer a case to the specialist, to decide if the patient shall be sent to an operator who believes in enucleation or to one who practices tonsillectomy.

In deciding the first question, the physician must recognize that inflamed buried tonsils are more menacing to the patient's health than are simple hyperplastic tonsils and for the most part even more than are hyperplastic tonsils which are undergoing chronic inflammation.

The evil results of mouth breathing are so generally recognized that adenoids are usually promptly removed as well as the simple hyperplastic tonsils which often accompany them. It is this type of tonsil, the least damaging, which is most often enucleated, although very often a complete removal of the accompanying adenoid is followed by a shrinking of the tonsils. This is especially true when the condition occurs in infancy. The buried tonsil or the moderately inflamed enlarged tonsil with marked anterior cervical adenitis may be, and often is, passed over to the detriment of the patient. Case reports of the toxic and septic aftermath to acute tonsil infection are oft recurring in current medical literature. Nephritis, arthritis, pleuritis, endocarditis, pericarditis, pyaemia, tuberculosis, rheumatism, chorea, these are all stated to have followed infection through the tonsil and such statements are confirmed by clinical evidence. Those of us who deal much with children have in our case books many records that bear the same testimony, but if we study these records carefully we will see that the major part of such affections arise in patients whose tonsils are either of the buried or the moderately enlarged, chronically inflamed type; also that such invasions of the body rarely follow a first attack of tonsillitis, rather they are characteristic of the acute exacerbations of chronic ton-

sillitis. Extensive experience with the exanthemata will convince anyone, as literature shows it has convinced many, that the virus of measles, scarlet fever, rubella, and diphtheria gain a foothold in the crypts of diseased tonsils and spread from these ideal breeding places.

While most physicians are convinced that such recurring infections of the tonsils make operative interference imperative, only a few are impressed with the states of chronic digestive disturbance and malnutrition that accompany the enduring low grade inflammations of buried or partly buried tonsils. Slight wasting, moderate enlargement of cervical glands, anorexia, anemia, languor, sometimes chronic or periodic vomiting, well marked recurrent slight fevers, and disturbed sleep, make up a clinical picture that disappears once the tonsils are removed. Marked degrees of cervical adenitis may on the other hand arise from toxins or bacteria borne from crypts to glands in the abundant lymph streams that drain the tonsils. There can be no doubt that many children are, without necessity, subjected to mutilating operations for removal of glands of the neck. Many of these glands supposed to be tubercular are in reality not so, and will promptly disappear on removal of tonsils. The statistics of Sewall at the Cooper Medical Clinic show that more than one in eighty of tonsils removed are tubercular. Even if the glands be truly tubercular, no operation for their removal can be considered rational that does not also contemplate coincident removal of tonsils. In most cases these lymphoid structures constitute primary foci of the disease and if, as is rarely the case, they are free of this organism the probability is that toxins passing from them to the lymphatics so depress resistance that glands are rendered more susceptible to damage by tubercle.

A girl of fourteen for eight years had borne a mass of enlarged glands. Some of these had broken down and for five years the patient had been plagued with a discharging sinus. Operation had been advised by a number of surgeons, and refused because it was proposed to do the extensive dissecting operation to remove both superficial and deep chains of glands. The tonsils were taken out, and one calcified gland in the line of the sinus was removed. The sinus promptly healed, the glands receded, the girl gained eight pounds in five months and is now a round and ruddy picture of health.

Again, a baby eight months old with enormous cervical glands had been operated on and presented an open sloughing wound three inches long. Further operation was performed. The surgeon despaired of the child's life. It was rapidly losing weight and seemed in extremis. At this stage the operators were prevailed upon to allow removal of the tonsils, both of which were shown on pathological examination to be tubercular. Immediately the child began to improve. It was, however, necessary to operate again to remove a number of glands that became enlarged after the tonsillectomy. But the general nutrition of the child improved, he responded, as he had not done before, to dietetic treatment and the neck tissues for the first time began to heal. To-day at the age of fourteen months he is a happy, fairly nourished child rapidly returning to health. Wood has clearly shown by a series of beautiful in-

jection experiments that it is possible for materials entering the tonsils to follow the deep glands and lymphatic vessels and so reach the pleural cavity and even the lung apex. He believes that this is the usual course of infection in many cases of apical infection.

Such facts enable us clearly to see what we can gain by operation for patients suffering from one or another type of chronic tonsillitis. But before deciding to send our patients to operation, we must consider the possibilities of damage from the operation and whether such possible damage out-balances the almost certain gain. Aside from the possible damages inherent in all operations arising from anesthetic or from accidents the critics of tonsil operation claim that functional damage may follow (1) from loss of the specific function of the tonsil, (2) from injury to singing voice, (3) from damage to the faucial pillars, (4) from hemorrhage.

To take up these points in reverse order every physician who sends his patients to a colleague for tonsillar enucleation must do so realizing that severe hemorrhage may follow the operation. One who has viewed the work of many operators during the past two or three years must be struck by two things, first, that many cases of excessive bleeding are due to faulty technique and second, that the operators are constantly improving technique and reducing the factor of danger. (2) From damage to faucial pillars more especially the posterior. This again is a matter of technique; damage has been known to result in such impairment of the soft palate's action that regurgitation through the nose has resulted, but such accidents are so infrequent as to be negligible; fourth, injury to singing voice is constantly feared. How anyone with marked enlargement of tonsils or the turgid injected fauces, that accompany buried tonsils, could ever develop a transcendent singing voice is beyond the imagination of man and like the objection to possible permanent injury following damaged pillars may be ignored.

The possibilities of evil that may follow loss of tonsillar functions worry many minds, just as the same kinds of minds were troubled years ago about the ills that might afflict the appendixless individual after removal of that organ. The best answer to that criticism is to point to the thousands of children who have been changed from pale, anaemic, ill-nourished individuals into rosy, full-fleshed little ones, merely by enucleation of diseased tonsils.

All the evidence that clinical experience and biologic fact bring to bear on the subject, tends to show either that the tonsil is an accident of development, or that if it has any specific function, that function is for the most part, fulfilled before birth and ceases at a very early day of post natal life.

After an extensive study of the comparative anatomy of the tonsil, Hett and Butterfield have shown that in its most primitive form the tonsil is merely a tube lined with mucous membrane prolonged from the pharyngeal diverticulum. In a later type as found in monkeys, the tonsil is a pocket-shaped recess surrounded by lymphoid tissue. The third type zoologically, the solid projecting tonsil, is an evolution from the pocket form. Here

the lymphoid tissue is massed on the lower lip of the pocket to such a degree that it forms a protuberant mass, and the remnants of the pocket which represent the primitive pharyngeal diverticulum remains as the supra tonsillar fossa which is within the capsule of the tonsil. Only because of the excessive development of lymphoid tissue on the outer wall of the tonsillar sac does the fossa seem to be above the tonsil. These facts of development seem to suggest that the epithelium of the supra tonsillar fossa, and not the lymphoid masses of the tonsil, is the important part of that structure and, if such be the case, any danger from loss of the tonsils' function becomes so remote that in the face of the very real dangers, that we know do arise from diseased tonsils, we cannot but decide to have these menacing lymphoid masses removed. And once such decision is made, why should anyone choose to have an incomplete unscientific guillotine operation performed when enucleation is a procedure that fulfills every surgical principle? Time after time, in clinics and in practice, a child whose tonsils have been clipped comes to us suffering with all the signs and symptoms of chronic toxæmic malnutrition, and once the remaining lymphoid tissue is cleared away the patient's nutrition improves with gratifying rapidity.

One little girl of seven, who was the despair of her fond parents, had attacks of recurrent fever, occasionally accompanied by vomiting. She was much below weight, was irritable and in that state of nervous hypertension that might well be called the prechoreic state. Her parents could not believe that the tonsils were in any way to be blamed for her condition, as they had been removed at great expense by a celebrated specialist. In the meantime the child had courses of quinin for malaria, of urotropin for pyelitis, and had her right iliac fossa observed with breathless interest for weeks at a time. However, after a removal of her tonsillar stumps and of a tiny remnant of adenoid the child made an uninterrupted recovery and put on eight pounds of weight in three months.

Gentlemen, from the standpoint of the general medical practitioner, any tonsil that is markedly enlarged or subject to attacks of recurring tonsilitis should be removed, but removal of such is less important than is the excision of the buried tonsil for this it is, that is the source and origin of those chronic toxæmias which by depressing resistance open the way to the invasion of all sorts of infections.

THE ENUCLEATION OF THE TONSIL, A SURGICAL, NOT A RADICAL PROCEDURE.

By ALBERT J. HOUSTON, M. D., San Francisco.

By way of introduction, I wish to apologize for the lack of novelty in my subject, and for the fact that I have nothing new and startling to present. The ground has been gone over so well and so thoroughly so many times that I was under the impression that there was no longer room for argument until I was asked to read a paper upon the subject. The only reason for this paper therefore is the desire to prove to those of you who may be in doubt that the so-called radical operation is not,

strictly speaking, radical at all, but a plain, straightforward surgical procedure, necessitated by the exigencies of the problem, and the method of election.

My convictions are the result solely of my personal experience and are largely a matter of evolution. I began my career with a guillotine and punch. I found that the guillotine did excellent work, but that I had to select the easy cases. Those tonsils which were small, non-protruding and difficult, I endeavored to punch out and remove with scissors and forceps. Out of 51 cases operated thus, 3 left and could not be persuaded to return for more; in 4 the operation was followed by acute tonsillitis in the remaining portions; 2 had severe hemorrhage; and nearly one-third of them, on later inspection, revealed disappointing results, some requiring reoperation. The guillotine cases were more successful, but as I have said, they were selected cases, the easy ones. Plainly this would not do. I was getting good results in only a limited class of cases. In others my work was inefficient, and I was getting results that were far from satisfactory to the subject or to me.

In 1904 I began to dissect them out thoroughly, or try to. We had great difficulty with the tongue, with the gag, with the light, and tried all sorts of instruments. I am very sorry to say that I bungled a good many cases and that it was only after a year's work that I acquired sufficient skill to be reasonably sure of doing a thorough job. And now, after more than 500 cases, I am free to say that in all of them together, I have had less trouble than in the 50 cases done with the punch, etc. Others have gone through the same evolutionary process; have been driven to resort to a more thorough method in order to protect themselves from the nemesis of bad results, and to give their patients complete and permanent relief. And the concurrence of the majority of American throat surgeons in accepting this method is excellent evidence, not only of the necessity of the operation, but of their satisfaction with the results; its acceptance being simply a recognition that diseased tonsils are a problem in surgery to be attacked with the same care and thoroughness as any other, instead of being timidly tinkered with.

Before we accept and standardize any operation there must be two considerations: it must surpass in efficiency and not fall short in safety. As regards efficiency, we must consider the purpose to be attained: Why, in other words, do we have to remove tonsils? The first class of cases requiring removal are those whose damage is purely obstructive—due to size. These in my cases have constituted one-third. We may grant that in many of these cases simple amputation would give relief, but not in all. The leaving of a broad stump or a hidden upper lobe keeping up inflammation in the Eustachian tube is not thereby much helped. Moreover, a certain percentage of them recur. When we stop to consider that the original cause of the hyperplasia was infection, and that if we leave a stump with infected crypts, the hyperplasia recurs, it then becomes simply a corollary, that if we do not wish recurrence, the whole tonsil should be removed, even though the manifest disturbance be only that of obstruction.

The other two-thirds of the cases I have had to operate have, however, been of a different nature. These are not as a rule enlarged and their obstruction is a negligible factor. The majority of them have been sent by the physician or internist with the request for removal for some absorption of infection or of toxic products.

In this class of cases we may include those of cervical adenitis the relation of which to tonsillar infection is a universally accepted fact and has been definitely proven in certain cases by investigations of Wood and Goodale.

We may also include those cases of tonsillitis associated with tuberculosis. There are a sufficient number of cases reported to make us always suspicious of diseased tonsils as a factor in tuberculosis.

Goodale has reported 15% of tonsils removed for other causes to show tuberculosis. Solenberger reports 62% of his tubercular patients to have a history of tonsillar infection. We must therefore recognize at least the possibility of some connection. Nor must we forget those cases in which the resistance of a tubercular patient is kept low by the presence of an infection other than tuberculosis through the tonsillar crypts.

In this class of cases also, we must consider those associated with rheumatism. Such connection has long been recognized, and clinically it is an undoubted fact that many cases of acute rheumatism are ushered in by tonsillitis, and furthermore that many cases of chronic rheumatism have been benefited by removal of tonsils. Robertson gives the tonsils as the cause in 30% of acute and 90% of chronic rheumatism. Arthritis of various forms is frequently referred to infection through the tonsils. Within the past month I have had a case referred to me for removal of the tonsils for atrophic osteoarthritis, supposed to result from slow absorption through the tonsils, in the absence of other lesion. As this patient is 60 years of age, I have hesitated to operate. I cite this to show that oftentimes the pathologist and internist are the radical men, and that we, with a wholesome fear of the operation, are often loath to follow.

There are many other classes of troubles supposed to be due to tonsils, and for which we are asked to remove them, such as recurrent quinsy, or the keeping up of an irritative throat cough in children, obscure temperatures, and slow toxemias apparently of tonsillar origin.

All of these cases, two-thirds of all, may be called infective; and as it is recognized that systemic infection occurs through the epithelium of the crypts, it necessarily follows that to remove the possibility of invasion, we must remove the crypts. And the removal of the crypts involves the removal of the whole tonsil or its ablation, inasmuch as it is mechanically impossible to get rid of all crypts otherwise. In this two-thirds of all cases, I think we may say that the cause for removal necessitated a thorough removal.

Physiologically considered, if we agree with Goodale that a tonsil is identical with a cervical lymph node, then it is quite as necessary to remove it in toto as in removing any other diseased lymph node. And if we agree with Jonathan Wright

that it is the sunken, ragged tonsil, not the large one that lets through the dangerous germ, then it behooves us to have some efficient method of handling these small ragged tonsils. We need not go so far as Bosworth as to say that all tonsils are morbid growths, but we *must* acknowledge that the animal economy seems to get along perfectly well without them, and that no dire physiologic results have followed their removal.

The ultimate aim of the operation is the relief of the symptoms, and that operation is best which does this with the greatest efficiency. There can be no question as to the efficiency of this operation. Ten per cent. of my cases have been operated previously by some other method. Ward in 800 cases reports 129 previously operated, which means that 10 to 20 per cent. of other operations are not efficient. Now the men who are doing this so-called dissection are all agreed that it is rare to have to reoperate. I confess that those I have had to reoperate are to be charged to my lack of skill, rather than to the operation.

As regards the second consideration upon which the operation must stand, comparative safety, there is more room for discussion. No operation must be attended by danger relatively greater than the advantage to accrue; and to be the operation of election, it must be at least as free from danger as any other.

For the purpose of clearness we may classify the dangers in three groups: hemorrhage, anesthesia, infection.

As to hemorrhage, the Lord has not yet given us a tonsil operation that is not at times accompanied by hemorrhage. At least one fatal case in San Francisco has followed the guillotine. The worst I ever saw followed the cold wire snare in the hands of a skillful colleague. I have had two bad hemorrhages in cutting out pieces. In fact, I have three hemorrhages in 500 dissections, as against 2 in 50 by other methods. Hemorrhages from bleeders is beside the question. You get it with any method and personally, if I ever were to have such a patient, I had as soon be doing a tonsillectomy as a tonsillotomy. Injury to the carotid may likewise be disregarded, inasmuch as there is only one authentic case, and is purely accidental. Because somebody has opened a misplaced carotid is by no means sufficient reason for abandoning an otherwise successful operation.

Nearly every observer has reported hemorrhages. Some 180 cases of primary and 60 of secondary have been collected by Richards, who concludes from their review that there is less hemorrhage from tonsillectomy than tonsillotomy. Personally I have found that the cleaner and more thoroughly I do my work the less bleeding I have. We must, however, recognize that we may get it at any time with any operation and when we least expect it. If we do recognize this, it seems to me we ought to choose that form of operation in which, if we do encounter it, we are best able to cope with it. Now in the complete operation we have an anesthetized patient in a hospital with every emergency equipment, hot sponges, artery clamps, etc., and in prepared-

ness lies safety. We stop the bleeding from the first tonsil before we touch the second, and stop the second before we remove the adenoid. We do not let them come out of the anesthetic until it is all stopped. It is as a rule surprisingly easy to control it with hot sponges or artery clamps. If necessary, as I have had to do three times, the pillars can be sewed together. I honestly believe that if we go about this operation with the same surgical care and preparedness for emergency as we do any operation in general surgery, that hemorrhage is not only actually less, but that we are so infinitely better prepared to handle it that it really becomes only a surgical incident and is largely robbed of its danger. I have never seen a case in which comparatively simple means did not suffice. Still if, as in six cases reported by Jackson, the carotid must be tied as a last resort, we are here much better able to do it.

As regards secondary hemorrhage, such an equal number of cases have been reported from various methods that I doubt any particular method is freer than others from it. Delayed primary hemorrhage is certainly more apt to follow a cocaine and adrenalin operation. But true secondary may come after any operation, and in my own experience is practically always due to carelessness. If we keep our patients in bed, rigidly enforce the diet, and control cough, etc., we minimize the possibility, which is slight at best, but present after any operation.

The second element of safety is anesthesia. There is a veritable battle-ground. Were some means devised for operating without anesthesia, we would certainly take away the greatest risk. But anesthesia of some sort we must have, neither adults nor children will permit us to do much of an operation without it. In good patients we may use cocaine. But even so, a death has been reported in New York during cocaine removal, and personally I believe ether in the hands of a skillful anesthetist to be about as safe as the necessary injection of cocaine. With cocaine the gagging and retching of the patient is often so annoying as to preclude the possibility of clean work. And in case of hemorrhage I am sure we would all prefer to handle it with the patient on the table under anesthesia. One of the horrors of surgery is a tonsillar hemorrhage with a scared patient.

Every man who operates much is bound to have trouble at some time with anesthesia. My experience has been bitter. In April, 1906, I lost a case on the table from chloroform anesthesia. There was no bleeding; the child simply passed out during the operation and it was not realized until too late. Recently in doing an operation at the French Hospital I was given an untrained anesthetist who insisted upon chloroform. A few seconds after beginning to operate, the pulse nurse called attention to the bad pulse. He said it was all right. I felt the pulse and found only a flutter. We knocked the mask off the face, immediately gave ether, comphorated oil and nitrate of amyl., compression bandage to the legs, and artificial respiration with oxygen. After half an hour's work we were rewarded by the return of normal pulse and respiration. Both of these accidents were avoidable. Neither was a

case of status lymphaticus, but both were simply cases where the anesthetist was not sufficiently close in his observation of the condition. In neither case was the warning heeded, and in both more anesthetic was given after the danger signal had been sounded.

Others have had similar experience. Of 29 fatal cases recorded, 26 have been with chloroform. I believe ether by the drop method or Junker to be safe if we have an anesthetist who is trained, cautious and observant. The risk, I think, hinges largely upon the personal equation of the anesthetist. No anesthesia is more technical. It should be left to specialists who are familiar with that kind of operation. Nor do I believe that under the light of present testimony we have any right to use chloroform at all.

I believe that by the use of ether given by a trained anesthetist, we can minimize the risk and make the anesthetic as safe here as it is with any other operation. We must, however, recognize that there is always some risk, must explain it to our patients and let them decide if the results sufficiently outweigh it. It is our moral duty to recognize this risk, and guard against, but because there is this very small percentage of danger, as in all surgery, is no reason for abandoning an otherwise good operation and substituting one inferior in efficiency. If the tonsils have to be removed at all, we will have to have an anesthetic in the majority of cases. The added advantage of being able to do thorough work, and being able to cope with bleeding, I think more than offsets the additional risk of ether, provided it is ether and the right anesthetist.

Remote anesthesia dangers are comparatively rare, such as pneumonia, kidney complication, etc. The percentage is so small as to be almost disregarded, but must always be recognized as a possibility. There is a class of disturbances attributed to this operation, I think greatly overestimated, namely, those of infection following the operation. One case of scarlet fever has been noted. This was simply an accidental infection due to exposure. Another of tuberculosis. Here there was undoubtedly a pre-existing focus which lighted up. Such things cannot be avoided, being purely accidental and liable to follow any operation. I am convinced, however, that there is less danger when the tonsil is thoroughly removed than when portions are left.

If I were given time I should like to say something of the technique and to show that the exactness, care and attention to details make it strictly a proper surgical procedure. Suffice it to say that whether we use knives, scissors, blunt dissectors or the finger, the ultimate object is the same: the complete removal of the diseased tissue and the essentials to success the same, careful exact work and a clean, straightforward surgical technic. My method is no better than that of a hundred others, and it is not necessary to flood the journals with innumerable articles to prove that my way is right and yours wrong. Nor is it necessary to add to an already too elaborate armamentarium, by changing the catch of a snare or the curve of a knife and calling it by our own names.

In conclusion, I wish to state my firm belief that

a thorough and complete operation has become necessitated by our increasing knowledge of the pathological role of the diseased tonsil. That this so-called radical operation is most distinctly the method of election of most throat surgeons in America, because it gives results which no other method gives, and because it is perfectly adaptable to all tonsils, the big as well as the little ones; because it is simple, sure and as safe as any other when the technic is mastered. There is really less danger of hemorrhage than by any other method and the only additional danger is that of anesthesia, which is exceedingly small if we use ether and a proper anesthetist. By a thorough and complete removal we really run no greater risk than otherwise, and we get definite and permanent results. It is not, therefore, radical in the sense of being extreme or unnecessarily severe, but it is radical only in that it is thorough and complete, no more radical than any other operation in surgery which aims at a complete removal of diseased tissue when its influence upon the animal economy demands it.

THE PATHOLOGICAL HISTOLOGY OF THE TONSIL.

By HILL HASTINGS, M. D., Los Angeles.

The basis of this paper is the study of some tonsils removed at the Children's Hospital from patients from my clinic at the Los Angeles College of Medicine of the University of California. I have reviewed also some of the recent literature on this subject, and later it might be of interest to briefly mention some of the points brought out by various writers.

During the past eight years I have shared in the active warfare against the tonsil. Until the last two years I rarely looked on the inside of the tonsil. I make this confession the more readily because I believe it is a fault common to most of us. We have too often been throwing the tonsils into the waste bucket or else uselessly bottling them up, as one does prize peaches of unusual size. We should remember that naked eye examination is rated almost as high as microscopic examination in the study of other organs, as for instance, the kidney. I have made it a rule of late to have a sharp knife ready with my tonsil instruments and at the end of the operation to spend a few minutes in sectioning the tonsil.

For the microscopic examination I am indebted to the instruction and guidance of Dr. Stanley Black, of the Pathological Department, and to the assistance of Miss Roberts, of the present senior class.

The minute anatomy of the tonsil, as commonly found, is about as follows: The tonsil is an ovoid mass of adenoid tissue covered on its free surface by stratified epithelium and elsewhere enveloped by a fibrous capsule. Its free surface shows the mouths of numerous crypts, about 12 to 20 in number, most prominent in the upper one-half of the tonsil. The crypts extend irregularly deep into the tonsil tissue, many of them down to the capsule. The tonsil tissue proper consists of numerous small ovoid masses of cells, called "follicles." Each separate mass or

"follicle" has its individual capsule of delicate fibres, enclosing a ring of lymphoid cells arranged often with precise regularity in concentric rows. The lymphoid cells constituting the follicles are closely massed together without order. They are small cells with large nuclei. Many of the lymphoid cells, especially in the center of the follicle, show decided mitotic changes. There are besides, a few scattered polynuclear cells, and plasma cells.

The follicles are closely held together by a delicate connective tissue reticulum, apparently offshoots of the large fibrous septa, irregularly projecting from the fibrous capsule. There are small arteries and veins and lymph vessels. The lymph vessels are of course efferent. Except that the tonsil has no afferent lymph vessel, it is similar to an ordinary lymphatic node. The stratified epithelium of the free surface becomes thin as it dips into the crypts at the deeper portion of which it is found to be one cell thick without at places showing any basement membrane. The surface epithelium shows between its cells, here and there, polynuclear cells and lymphoid cells. Many bacteria are found in the crypts but none in the tonsil tissue proper.

We have found certain naked eye appearances worth noting. As a rule the tail or lower one-third of the tonsil is fairly firm and yellowish-white in color; the upper two-thirds or one-half softer; or here and there irregularly soft or fibrously firm, with large crypts. When the whole tonsil was found fairly firm, yellowish-white and with no purplish red softening around the crypts, the tonsil was considered normal, or at least a normal hyperplasia. The soft, purplish-red or irregularly fibrous tonsils always showed a chronic inflammatory change when examined under the microscope. In the soft, purplish-red upper one-half of the tonsil was often seen a small tumor projecting from the mouth of the crypt. This was seen in large, chronically inflamed tonsils and was found to be a prolapse of tonsil tissue. In a few tonsils were found what were at first taken to be small abscesses. In one case was seen a thick-walled sac near the capsule, about the size of a small pea, full of creamy odorless fluid. No T. B. were found in the section, and section failed to show any giant cells, and it was finally concluded to be an obstructed crypt. There were no enlarged glands in the neck in this case. Similar sacs were found in several other cases, situated near the surface. The tonsil in each case was moderately large, submerged and purplish-red in color, and there were again no enlarged glands in the neck. In another case, a child of six, without any marked inflammatory signs other than purplish-red upper one-half and with no enlarged glands in the neck, the tonsil section showed in the crypts masses made of fine net work of threads, which Dr. Black thought resembled actinomycosis.

In many tonsils, as commonly noted, the crypts were found to contain cheesy material, often of foul odor.

Tonsils from sixteen cases were examined microscopically. The microscopical examination of many of these tonsils proved interesting. In no case were bacteria found within the tonsil tissue proper. Not only were no tubercle bacilli found, but also in no

case were there any signs of giant-cell formation. There were, however, in nearly every case well-marked signs of chronic inflammation, especially marked in the upper one-half, or head of the tonsil, often with extensive fibrosis and new blood vessel formation. *It was noteworthy that these signs of chronic inflammation were found in tonsils of patients who gave no symptoms of chronic inflammation; the operation being indicated because of the size of the tonsils and because of obstructive adenoid.*

One case may be cited as fairly typical: Edna P—, aged 11 years, operated November 12, 1909. Right tonsil large, firm, partially covered by thick plica tonsillaris; crypts are small, not dilated; sections show firm yellowish-white appearance. Macroscopic diagnosis, "simple hyperplasia." Left tonsil, submerged, covered by thick plica; large crypts dilated, containing some cheesy material; sections show purplish-red softened areas. A small tumor projects from one crypt, likely a prolapse of soft tonsil tissue. Macroscopic diagnosis, "Chronic Tonsillitis." Adenoid, a large, lobulated, yellowish-white mass. The notes of the microscopic examination of the left tonsil are: "Surface epithelium is thickened, with slight infiltration of polynuclear cells; throughout the tonsil are extensive collections of fibrous tissue; in places are bands of c. t.; elsewhere diffuse fibrosis; some scattered leucocytes, with here and there dense clumps of leucocytes near the crypts. The follicles in general are small; many of the follicles apparently partially destroyed by the fibrosis. Blood vessels are numerous. In many crypts are found lymphoid cells, some polynuclear cells, and a considerable number of cells with darkly stained irregular nuclei with a considerable amount of cytoplasm taking a light pink Eosin stain (probably desquamated epithelial cells). The noteworthy sign is the extensive formation of new connective tissue." (Dr. Black).

In conclusion, this study of the pathological histology of the tonsils is not sufficiently extended to warrant any opinions as to when the tonsil is sufficiently diseased to require removal; or as to whether the tonsil is ever a useful organ. It might be of interest, however, to briefly review some of the opinions of certain investigators.

1st. As to when the tonsil is diseased. Jonathan Wright states in substance that comparative biology teaches that a pathological change does not necessarily mean a destruction of usefulness of an organ. On the contrary, it is but a response to changed surroundings, resulting in a necessary alteration. He mentions the fact noted by many observers that the black and red races of the tropics have a markedly lower proportion of children with large tonsils and seems to believe there is a significant coincidence between the tendency to enlargement of the tonsils and the natural immunity of civilized man to infectious diseases.

2nd. Is the tonsil often the door or entrance for tubercle bacilli and other bacteria?

Much has been written on both sides of this question. Jonathan Wright¹ in examining tonsillar sections from 125 patients failed to find any evidence in a single section of tubercle formation. These patients were likely children otherwise heal-

thy, except for enlarged tonsils and adenoid. The same writer states "that although dust or inanimate matter readily passes through the tonsillar epithelium, bacteria do not so readily pass."

Goodale² states, "bacteria are normally present in the crypts, but are not usually demonstrable in the tonsillar tissue proper. The supposition appears possible that bacteria may be continually making their way into the tonsillar tissue but at the moment of entering encounter conditions which terminate their existence."

Rosenheim³ quotes Goerke's opinion that "tonsils owe their protective function not only to the mechanical influence of the constant strain of leucocytes toward the surface, but to two other factors, namely, the bactericidal action of the lymph and that of the products set free by the breaking down of the lymphocytes."

On the other side of the question, Wood⁴ concludes from certain experiments that "it is scarcely possible for a great quantity of immune bodies to accumulate in the tonsil, that the larger amount of such material enters the general circulation. In 136 cases of pulmonary tuberculosis Wood found that the tonsils were involved 94 times,—that is 69%." The same author recently examined tonsils of 37 cases of tuberculosis of the lungs and found typical tubercle signs in all but 3 cases. He concludes,— "So far it seems practically proved that for the tuberculous germ at least the tonsil is many more times susceptible than other portions of the throat. Further, that if one organism passes readily into the tonsillar tissue, it is probable other organisms may do the same." We must remember, however, that these tonsils were removed from patients who died from tuberculosis. It is, I think, fair to assume that these were secondary infections in patients whose resistance to the tubercle bacillus was practically destroyed.

Aside from the experimental opinions on either side of this question, one must reckon with the vast amount of clinical records and clinical opinions. Innumerable case-records definitely point to the tonsil as the original point of infection in tuberculosis of the glands of the neck; also as the initial point of infection, in many cases of acute articular rheumatism, in many cases of acute bacteremia and in many cases of acute endocarditis. Furthermore, clinicians have yet to find that removal of the tonsils has caused any disturbance of health, or in any way decreased the body resistance to infectious diseases.

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Discussion.

Dr. Langley Porter, San Francisco: I would like to ask Dr. Houston what has been his experience with enucleation by the finger, which I have seen often and which seems to be a complete operation. Also I would like to know whether or not any of the gentlemen present consider it a better procedure in separation of the tonsil from the stump to use the guillotine instead of the snare, and if hemorrhage is not most often due to injury of the internal surface of the pillar, and if a retractor for the posterior pillar is not a most useful instrument.

Dr. W. E. Lilley, Merced: I have been very much interested in these papers. In my cases the results of tonsillotomy have been indifferent; once in a while they are good, sometimes there is no improvement. Some of my cases I have sent to specialists in San Francisco, the results have not always been good ones and it is a matter of surprise to me to learn that they are still doing tonsillotomy. Recently I have been doing tonsillectomy and enucleating by the finger down to the pedicle and then using the snare. I give anesthetic, take plenty of time and it does not seem to be such a difficult operation.

Dr. Cullen F. Welty, San Francisco: I am of the opinion that the whole group of infectious diseases enter by way of the lymphoid ring. This was called to my attention some five years ago by an observation made at the City and County Hospital. In an epidemic of diphtheria among the nurses, there were 20 who had the disease, all had diseased tonsils. In all cases the membrane or soreness made its first appearance on the tonsil. There were some 20 nurses who had their tonsils removed, none of them had diphtheria. I can say with absolute certainty that diseased tonsils do predispose to diphtheria. Some 15 years ago it was my good fortune to observe an epidemic of measles. We could diagnose measles almost to a certainty by the appearance of the throat; besides this inflammation preceded the coryza, and at the present time it seems to me that the source of infection was at the primary source of inflammation. In scarlet fever there is always more or less throat inflammation. Probably it could be better observed on endemic or epidemic. In acute or chronic rheumatism it has been proven beyond a doubt, I have had some 12 cases, all but one free from rheumatism. I have had one case that I diagnosed as tuberculous. The others were accidentally discovered. In two of the cases it was apparently a primary process. Enlarged cervical glands are directly traceable to tonsillar infection, and should be removed if they do not disappear after tonsillar enucleation, as a large percentage of them are tubercular, which has been proven by various observers. I wish to call particular attention to people who are under weight, providing they are otherwise healthy; you can increase their weight from 10 to 30 pounds by enucleation of the tonsils; this is based upon my own observations, I have not seen it in the literature. In 99% of all my operated cases the patients have increased in weight from 5 to 30 pounds. I believe this increase in weight is due to the elimination of a gland that produces toxins or other poisons. Recently I have removed the tonsils and adenoids in 9 cases of acute otitis (few day's duration), in all cases the ears were free from pus before the tonsillar wound had covered by epithelium. In a comparatively short time this procedure will be the accepted teaching in the treatment of acute purulent

otitis. At the Oto-Laryngological Section of the American Medical Association some four years ago, I made the following statement: "That all tonsils present after 20 years of age, were necessarily diseased and as pathologic organs should be removed." At last year's meeting of the same society, Robertson of Chicago, stated the same; he failed to give me credit for making the statement first. I am still of the same opinion and believe that in a short time the tonsil question will cause the entire revolution of whole chapters of internal medicine. To substantiate this, Dr. Francis Williams, special anesthetist of the St. Francis Hospital, says that 35% of the patients that are operated on for tonsils and adenoids have an organic heart lesion. This is self-sufficient reason to begin investigations in an entirely different line. It follows as a matter of course that a complete operation is necessary if you wish to free the patient from this particular source of infection. There are many ways to do this. However, the one should be selected which combines minimum anesthesia, minimum amount of traumatism, small amount of hemorrhage at the time of operation and no hemorrhage following operation. I am still of the opinion that hemorrhage following operation is dependent upon remaining tonsillar tissue, from my own observations in 500 tonsillectomies. I have had but one case bleed after leaving the operating table; that particular case had remaining tonsillar tissue, she was 60 years of age, besides.

Dr. T. C. McCleave, Berkeley: As a general medical man I want to particularly endorse all that Dr. Porter has said. The most significant point was that a large proportion of specialists are still doing tonsillotomy. That is not right, and the general medical man knows that it is not right; and I want to say that any who may still be doing tonsillotomy must expect to lose cases which are referred by the general medical man. They must do tonsillectomy if they expect to get these patients from the general medical man. To the general practitioner I wish to say, be very careful to refer your patient to the specialist who is going to do a tonsillectomy and not a tonsillotomy, and leave your patient as badly off as before. I think much of the blame for the poor tonsil work done is due to the fact that the work is done in the office or home, and the operator does not dare to do it as thoroughly as it ought to be done; I think every patient operated for tonsillectomy should be sent to the hospital. As Dr. Houston has stated in his paper, it most certainly ought to be done under the most careful conditions as to the anesthesia, and the patient should be anesthetized by a man who is experienced in anesthesia in this class of cases.

Dr. W. H. Roberts, Pasadena: I most firmly feel that tonsillotomies should be abolished. There is a certain proportion of nose and throat specialists who still do tonsillotomy and it should not be dignified by the name of operation. The only operation should be the complete removal of the tonsils; this is the operation and need not be called radical as it is not radical. I always operate under ether and always in the upright position, as I am sure that that is perfectly safe for the patient. It is a most necessary thing for the patient to be given anesthesia by a very experienced anesthetist. In doing the finger dissection it is important that you carefully free the tonsil from the posterior pillar.

Dr. Robert D. Cohn, San Francisco: I agree fully with all that Dr. Porter has said, especially with

regard to the value of the operation. The endorsement of such men as Dr. Porter is all the more important when one considers that they have the opportunity of observing the patient for a long time before and after the operation, whereas the specialist has the case under his eye often for only a very brief period. The radical tonsil operation is after all technically simple enough in the majority of cases, in fact more or less child's play. The two dangers, anesthetic and hemorrhage, Dr. Houston has analyzed and in general I concur in his conclusions. The one point which I should like to bring out, however, is this,—that the tonsil operation is only in exceptional cases done to satisfy a vital indication. In other words, it is not ordinarily a direct life-saving procedure and for that reason not analogous to the general run of major operations.

Dr. Kaspar Pischel, San Francisco: We are all indebted to Dr. Porter for his paper. When we advise enucleation of tonsils we often have to meet the opposition of not only the parents, but the family physician, too. But if the latter points out the advantages of the removal of the tonsils for the general health of the child, the parents will gladly consent. It has been stated that a large percentage of specialists in San Francisco are still practicing tonsillotomy instead of tonsillectomy. I hope the speaker is mistaken. Regarding the removal of the stump, I find that the electro-cautery snare causes decidedly less bleeding than a cold snare. I am glad that the importance of an expert anesthetist was pointed out. In grown persons I prefer to remove the tonsils under local and regional anesthesia which is perfectly satisfactory except in nervous persons.

Dr. Wm. Ellery Briggs, Sacramento: I think Dr. Cohn's remarks quite pertinent and to the point. The advice to have the tonsils removed is often given too lightly and without sufficient indications to warrant so serious an operation. There are few operations which give more marked and gratifying results than tonsillectomy in properly selected cases, but I am strongly convinced that many men at present attribute malign influence to and remove quite normal tonsils. I have given up local anesthesia in the removal of tonsils. The patient should be in a hospital and under the influence of ether. Some time ago I gave up doing the operation under cocaine and adrenalin in my office. In reply to a question by one of the gentlemen present, I would say that tonsillectomies are rarely done in Germany. In my opinion they are not radical enough, but I fear that some of our countrymen are at present making a fad of a very useful operation.

Dr. J. Dennis Arnold, San Francisco: In former years we removed tonsils because they were enlarged or the seat of a disease, and consequently we satisfied ourselves by any operation that rid our patients of the redundant or diseased tissue. Having learned that a tonsil that is neither hypertrophied nor the seat of disease may yet be, and often is the cause of various systemic infectious disorders we have come to adopt a procedure which has for its purpose the complete removal of the gland. For this very sufficient reason tonsillotomy has been entirely replaced by tonsillectomy in these days. After some experience with all the numerous methods that have been advocated for ablation of the tonsil, the following appears to me to be an ideal procedure: Free the gland from its investiture by the anterior and posterior pillars with one or two shallow curved incisions, and then by blunt dissection remove it with capsule intact from its bed.

ROUTINE OBSTETRICAL DIAGNOSES.*

By ALFRED BAKER SPALDING, M. D., San Francisco.

The average general practitioner rarely makes complete ante-partum or post-partum examinations. It cannot be that he considers them valueless, for more than thirty years ago the late Paul F. Munde published a most convincing paper on the various modes and procedures by which abdominal examinations and manipulations should be conducted during pregnancy and labor and the numerous different conditions in which their employment is not only beneficial but necessary. Richardson and Chadwick of Boston, as well as Frank C. Wilson of Louisville, Kentucky, also recognized a generation ago the great value to be placed on the routine systematic examinations of pregnant and puerperal patients and wrote most clearly on this subject. But in spite of their vigorous writing and that of a host of later clinicians, so slow has been the improvement that I will venture to state that not one in fifty general practitioners to-day understands the practice or comprehends the value of these examinations. It is safe to state that, unless he has taken a rare interest in his work, he has not made complete examinations of his obstetric patients since his undergraduate days.

It is not in a spirit of criticism that these remarks are made, but rather to raise the questions, Is there any practical value in making systematic examinations of obstetrical patients before and after labor, and, if so, is not the profession negligent in so universally neglecting this work in general practice? To answer these questions in the affirmative, I shall draw not on the vast literature of the past half century, but shall review personal records made during the last few years. For some years it has been my habit to record carefully in my clinic at the University of California Hospital and in private practice all ante-partum and post-partum examinations, and as a result I have compiled nearly 1500 records. From these records I desire to present my own conclusions bearing on the subject of this paper.

The busy general practitioner feels it a burden to go carefully into the history and make the necessary physical examinations of pregnant women. So many women apparently do well without examination that he is apt to agree with the laity that such procedures are both expensive and distasteful. In regard to expense, the fault lies as much with the profession as with the laity. Poor obstetrics is paid too much (and in the end the patient usually finds this out) but good obstetrics is paid too little, and often the patient does not realize how much has been done for her by her conscientious attendant. In regard to the distaste for examination, it has not been my experience that any woman has ever raised this objection consistently after the object for such examination has been explained to her. And how bitterly does the woman complain who has met with misfortune through the neglect of these very examinations!

Patients with minor cardiac trouble often become

pregnant and occasionally a more or less serious chronic endocarditis or myocarditis is unexpectedly discovered on examination. In 1100 examinations I noted 54 cases, or about 5%, with distinct cardiac murmurs. Many, it is true, were neurotic or hemic in character, but some were associated with serious valvular disease, and one case ended fatally a few weeks before the expected delivery. This patient did not realize that she had cardiac trouble. She settled her house in preparation for the expected confinement and evidently overstrained herself. She had two nights of dyspnoea, which her neighbors told her was natural, and ended suddenly in an attack of acute pulmonary edema. This case, together with others less serious, has placed a distinct value, to my mind, on the routine examination of the heart. It leads to guarding the patient more carefully during pregnancy, to easing the first stage of labor, and to shortening the second stage with forceps.

Tuberculosis of the lungs has been noted in six instances and in every case this has proven a serious complication, one patient dying of an acute exacerbation of pulmonary tuberculosis one month post-partum.

Of pelvic conditions, retroversions, infections, contracted pelvis and pelvic floor relaxations are the more common abnormalities found in examinations of early pregnancy. One becomes impressed with the frequency of retroversion in nullipara, and the wonder is that so many correct themselves as pregnancy advances. During the past month I have had to replace two impacted retroverted uteri, which were causing symptoms of impending miscarriage. One case I feel ended needlessly in miscarriage for the reason that the patient, a primipara, had not submitted earlier in her pregnancy to a vaginal examination. Knowledge of the condition also leads, in many instances, to valuable corrective treatment post partum.

Of infections, gonorrhea has been noted not infrequently in the clinic patients and has permitted of treatment throughout the pregnancy. In private work, infection from a previous abortion has been found more often than has acute gonorrhea and has at times in spite of, or perhaps in association with treatment, ended in miscarriage. In regard to pelvic measurement, I believe the educated finger is one of the safest pelvimeters we possess. Moreover, it is practically impossible to judge correctly the importance that is to be attached in the individual case to the shape and size of the pelvic bones as determined by external measurements with the usual pelvimeters. The internal pelvimeters are all more or less painful in the majority of cases and require also special training to be of any recided value. The finger is the least painful and permits of a most thorough examination. Contracted pelvis exists much more frequently in California than is generally understood. In 1500 examinations, exclusive of consultations, I have noted 76, or 7½%. The minor grades are easily overlooked and I have seen in consultation a number of primipara with even serious obstruction permitted to go into labor unconscious of their condition and unwarned of their danger. Some most unsatisfactory consulta-

* Read before the Santa Clara County Medical Society, June 16th, 1910.

tions have been with patients long in labor, the child blocked by pelvic disproportion and fetal life deliberately sacrificed because of neglected pelvic examination of pregnancy. And on the other hand, it has been my good fortune in several cases seen of early inpregnancy, to successfully deliver later, by Caesarean section or induced labor, patients who had previously lost their children at confinement.

In the primipara the condition of the pelvic floor ante partum presents to the examiner a condition that should exist post partum, while the examination of the pelvic floor of multipara often demonstrates a condition of what should be avoided. Also I believe it is possible with practice to estimate in a certain percentage of cases the individual perineum which will probably stretch safely over a child's head at delivery and those which certainly will lacerate unless treated by preliminary dilatation or incision.

The laboratory examinations, limited as a rule to an occasional test for albumin in the urine, are not satisfactory. They are certainly better than nothing, but are apt to lead to a wrong sense of security, both on the side of the patient and the attendant. All practical clinical and laboratory tests should be utilized. A blood pressure test will often give an earlier warning of toxemia than a casual examination of the urine.

Later in pregnancy the abdominal examination affords knowledge of the condition of the uterus, the position of the child, multiple pregnancy, prognosis of labor and the probable date of delivery. The round ligament which can be easily palpated affords a fair index to the development of the uterus, the position of the child can with ease and with considerable preciseness be made out in the large majority of cases. It is a relief to know that the child lies in a normal position, and if the position is found to be abnormal it can, if judged necessary, at times be corrected. The chief value, however, is, probably, to place one on guard in abnormal cases, particularly in cases of occiput posterior. The diagnosis of twins is not in itself to my mind of great value, although in my service eclampsia has occurred with one twin case and more or less severe toxemia has been present in all.

So many patients give rise to worry on account of an apparent moderate pelvic and fetal disproportion and later deliver themselves normally or possibly precipitately, that about all that can be done is to classify these cases of moderate pelvic contraction into those that probably will have normal labors and those that will possibly have trouble, and to be prepared to perform any major or minor operation that might be indicated as labor progresses. It is a great satisfaction to know that the patient presents no abnormality and that the prospects are favorable for a successful labor, and it is of the utmost value to know early the presence of marked abnormalities, which can be done only when one makes a practice of examining his obstetrical patients systematically, so that due consideration, and if necessary consultation, can be had before an exhausting labor forbids a conservative surgical treatment of the case. It is generally known that the size of the abdomen relates to the probable date of

the labor, although to my knowledge no one has yet devised a practical working rule based on this fact. After measuring carefully a large number of pregnant women I have come to rely on the fact that, previous to the time of settling, 4 added to the distance in centimeters from the upper border of the symphysis to the top of the fundus coincides in a large number of normal cases to the week of the pregnancy. From this the estimated date of delivery in the normal case corresponds closely to that of Nagle's rule. This measurement to be most accurate must be taken after the fundus is above the umbilicus and before the head has settled into the pelvic cavity. These measurements I consider of great value in cases supposedly overdue according to Nagle's rule, particularly when associated with a slight pelvic contraction, for so long as the measurement is not excessive it is safe to allow nature to manage the case, but in the face of large abdominal measurements the delay in the induction of labor is a most serious procedure.

The post-partum examination, made six weeks after labor when involution is fairly complete, is seemingly almost as much neglected as is the ante-partum examination. Much needless suffering might be prevented and many miserable lives made livable were more post-partum examinations made. The usual examination on the ninth or tenth day is practically valueless except as a preliminary to pelvic treatment. As an act in the discharge of a patient it is absolutely worthless. Ten days after labor the uterus may be found retroverted and some good may be obtained by procedures instituted to correct its position or hasten its involution, but it is not until much later that all the difficulties of the pelvis can be made out. If every obstetrical patient were examined digitally and with the speculum six weeks post partum a large number of retroversions would be discovered and corrected, some patients with unhealed lacerations of the cervix would be saved the discomforts of a heavy subinvolved uterus with the danger later of a possible malignancy, and a very large number of patients would be informed of serious pelvic floor relaxations and encouraged to submit early to proper repair, to the end that their general good health would be maintained while prolapse with cystocele and rectocele would be prevented.

The pelvic floor in about one-half of all primiparae is lacerated at delivery, no matter what procedure is instituted to prevent it. Often it is not a severe laceration and may heal kindly without stitches, but there will always remain a relaxation in those patients in whom the median raphe, the deep or superficial fascia or levator ani muscles have separated. Of the patients improperly repaired in the usual way after labor, fully 40% remain uncured, for the reason that the operator does not repair the actual damage. With multipara only about 10% lacerate at childbirth, for the reason that probably more than half the remaining 90% are already so badly torn that further laceration is unnecessary. The 10% which lacerates represents usually the well-repaired lacerated primiparae.

In private and hospital work, 36% of primipara

and 9% of multipara have been repaired. It is a curious corollary that in the out clinic department, where patients are mostly confined by students, only 8% of primipara and 8% of multipara were judged to need a perineorrhaphy. The inference would seem to be that the less experience one has the better are the results, but the fact is that with an increased experience in examining the pelvic floor post partum, the more one will find to repair.

This paper is a plea to give the often maltreated obstetrical patient the same study and consideration that is shown the more interesting medical and surgical patient. Obstetrics calls for much that is unrewarded and credits much that is undeserved, but in the long run it pays to consider most seriously the young primipara and to give to her and to her prospective baby the careful attention and conscientious practice that can only be obtained by a universal routine systematic ante partum and post partum examination.

RAILWAY SURGEON

THE EIGHTH ANNUAL MEETING OF THE PACIFIC ASSOCIATION OF RAIL- WAY SURGEONS, SAN FRANCISCO, CAL., AUGUST 26TH AND 27TH, 1910.

Minutes.

Meeting called to order at 2:30 p. m., President Kurtz in the chair.

Address of the President: "Tendon Transplantation."

It was moved and seconded that the reading of the minutes be dispensed with. Carried.

Following applications for membership were read:

G. J. Bergener, San Francisco; G. W. Stout, Ukiah; A. M. Thomson, Sonoma; A. R. Graham, Tomales; F. R. Horel, Arcata; E. L. Cottrell, Scotia; F. E. Sohler, Geyserville; E. J. Ruddock, Guerneville; C. C. Cottrell, Scotia; S. L. Reu, Ukiah; U. V. Stone, Healdsburg; F. E. Raynes, Duncans Mills; S. P. Cavanagh, Pt. Reyes; R. B. Williams, Sausalito; G. S. Loveren, Fortuna; H. S. Gorrage, Petaluma; J. W. Jesse, Santa Rosa; S. Mizell, Toledo, Mex.; W. P. Murray, Caliente, Nev.; C. E. Standler, Imperial; H. W. Gibbons, San Francisco; H. T. Rooney, Colfax; C. L. Howell, San Francisco; L. D. Green, San Francisco; P. J. Mangan, Winnemucca, Nev.; H. Abraham, San Francisco; W. L. Blodgett, Willits.

It was moved and seconded that the Secretary cast the ballot. Secretary cast ballot and the applicants were duly elected to membership.

Scientific program was proceeded with according to program.

The Secretary read invitation from the Los Angeles County Medical Society, inviting us to hold our 1911 meeting at Los Angeles.

Motion was made and seconded that the ninth annual meeting be held in Los Angeles on the day preceding the opening of the meeting of the American Medical Association. Carried.

ELECTION OF OFFICERS.

Nominations for President. Dr. Taylor nominated Dr. O. D. Hamlin, Oakland; nomination seconded. It was moved and seconded that the nominations be closed and the Secretary cast ballot. So ordered.

Secretary cast the ballot and Dr. Hamlin was duly elected President.

Nominations for First Vice-President. Dr. McCleave nominated Dr. W. I. Terry, San Francisco; nomination seconded. It was moved and seconded that nominations be closed and the Secretary cast the ballot. So ordered.

Secretary cast the ballot and Dr. Terry was duly elected First Vice-President.

Nominations for Second Vice-President. Dr. Coffey nominated R. T. Legge, McCloud; nomination seconded. It was moved and seconded that nominations be closed and the Secretary cast the ballot. So ordered.

Secretary cast the ballot and Dr. Legge was duly elected Second Vice-President.

Nominations for Treasurer. Dr. Huntington nominated Dr. E. M. Keys, incumbent; nomination seconded. Moved and seconded that nominations be closed and the Secretary cast the ballot. So ordered.

Nominations for Secretary. Dr. Reardan nominated Dr. George R. Carson, incumbent; nomination seconded. Moved and seconded that nominations be closed and the Secretary cast the ballot. So ordered.

Nominations for Executive Board—one vacancy to succeed Dr. Morton, whose term expires. Dr. McCleave nominated Dr. S. E. Pinniger, Tracy; nomination seconded. Moved and seconded that the Secretary cast the ballot. So ordered.

Motion was duly made and seconded that proceedings be published in the CALIFORNIA STATE JOURNAL OF MEDICINE and that the Secretary confer with the editor of the JOURNAL, arranging with him that copies of transactions be sent to all members who do not now receive the JOURNAL, at the expense of the Association.

A vote of thanks was tendered the retiring President.

Adjourned to meet in Los Angeles in 1911.

PRESIDENT'S ADDRESS.

TENDON TRANSPLANTATION.*

By CARL KURTZ, M. D., Los Angeles.

I take this opportunity to express to you my sincere appreciation of the honor you conferred upon me at your last annual meeting. Coming unexpectedly as it did I feel more than complimented that you should have chosen me your presiding officer. I desire also to express my thanks to our proficient Secretary for his untiring efforts in arranging this excellent program.

I have attended the meetings of this organization for a number of years and have been exceedingly

* Read before the Eighth Annual Meeting of the Pacific Association of Railway Surgeons, August 26th and 27th, 1910.

interested in the papers and in the discussions by its members.

It has been my pleasure to see this Association grow from a small group of men into a strong organization whose actions and deliberations can do much toward advancing the science of medicine and surgery in this state. As the representative body of Railway Surgeons of the Pacific Coast it will no doubt continue to increase in membership and in influence.

The subject which I have chosen for my address is one in which I have been interested for a number of years.

Tendon transplantation is one of the most satisfactory procedures in operative surgery. I know of no operation the results of which are more gratifying to the patient or to the surgeon. When you consider that the destruction of certain groups of muscles and tendons give rise to conditions which may cripple the individual for life, you must realize the importance of an operation which will correct deformity and restore functional power to the afflicted parts.

Although Nicoladoni has been given the credit of having first performed this operation in 1881 we find that a tendon transference had been made by Tillaux as early as 1869 and by Duplay in 1876. The early career of the operation was attended by many failures, and it is only within the last decade that the technique has been perfected and the operation brought into prominence by such skilled surgeons as Codivilla, Goldthwait, Hoffa, Lange, Vulpinus and others. By tendon transplantation we understand the transference of the proximal end or portion of a healthy tendon to the distal extremity of a paralyzed muscle thereby transferring the muscular power to the affected area.

The indication for the operation is a partial or complete paralysis of a muscle or group of muscles, whose function can be restored by the power transmitted from healthy muscles lying in their immediate vicinity.

Peripheral paralysis the result of trauma is the most amenable to treatment.

Divided tendons, the result of stab wounds, gunshot wounds, or other injuries, frequently fail to unite by primary suture. The tendons retract, the muscles atrophy from non-use and fail to distribute their functional power. It is often impossible to locate the proximal extremities of these tendons, which are frequently imbedded in adhesions but the distal ends can be found and grafted on to some neighboring healthy muscle, again restoring the power to the paralyzed part.

The flexor muscles of the hand or foot may be destroyed by phlegmonous abscess. The destruction of the flexor sublimis or profundus digitorum will cripple the hand and render it useless for the purpose of manual labor.

Injuries of the peripheral nerves frequently result in a permanent paralysis over the area of their distribution. In recent injuries of the nerves we should endeavor to bring the ends of the nerve together with suture. This is often impossible and

when it is possible the nerve frequently fails to unite, destroying the functional power of the muscles which it supplies. The radial, the ulnar, the median or the musculo-spiral may be severed by a stab wound or gunshot wound or they may be torn by complicated fractures making repair impossible and resulting in the characteristic distortions. Perhaps the most gratifying results are obtained in those cases of paralytic club foot, the result of anterior poliomyelitis. I say gratifying, for in many of those unfortunate cripples the functional activity of the paralyzed muscles can be sufficiently restored to enable them to use their extremities without the aid of crutches or other apparatus.

In order to be successful in our operative work we must be familiar with the actions and functions of the various muscles. We must determine absolutely by electrical stimulation or otherwise, which muscles are paralyzed and which muscles have wholly or partially retained their functional power.

As regards the preparation of the field of operation, I want to emphasize the fact that absolute asepsis is most important. As much care should be taken in opening the tendon sheaths as is taken in opening the peritoneal cavity. Suppuration will prevent union of the tendons and destroy the usefulness of the plastic.

Long continued paralysis of a muscle or group of muscles is always attended by more or less distortion due to an overbalancing of the healthy muscles at the expense of the weaker ones. The object of the operation, therefore, is not only to supply functional power to the paralyzed muscles, but to correct the deformity. Correction of the deformity should always precede tendon transplantation. In the severe cases tenotomy and redressment should be made at least one month prior to the operation.

When should we operate? Not until the stationary stage is reached. According to Vulpinus not earlier than six to nine months after the onset of the disease and then only when all efforts to restore the functional power to the paralytic area with massage and electricity have failed. As regards the age, there is no limit. I have operated a case of paralytic club feet in a woman 52 years of age and have had a fairly good result.

The best results are obtained in children past the age of four.

In performing a tendon transference, it is always best when possible to select muscles of the same group and running in the same direction. However, there are times when antagonistic muscles can be used to good advantage.

The incision should be made directly over and parallel to the affected tendons. Paralyzed muscles are easily recognized by their atrophy and dull gray color. After opening the tendon sheath, the tendon is divided or split near its insertion and transferred to the paralytic one, to which it is attached with fine silk sutures. Various combinations of tendon transference are recommended. The simplest method is a lateral anastomosis between two neighboring tendons.

A healthy muscle of little functional use can be

sacrificed to supply important muscles whose function has been destroyed. For example the replacement of the tibialis anticus by the extensor hallucis.

When the power is to be supplied from a muscle of great importance then it is best to take a portion of it and graft it on to the paralyzed one, or, the paralytic tendon can be divided and attached to the healthy muscle.

Should a muscle still retain some of its function then it would be better to take a flap from the paralytic as well as the healthy tendon and stitch them together.

Owing to many failures that were met with in the treatment of paralytic club foot Lange suggested that the extremity of the healthy tendon be attached to the periosteum in order to give it a firmer fixation. Should the tendon prove to be too short it can be lengthened with strands of silk. These silk strands are in time imbedded in fibrous tissue, thus practically forming a new tendon. This same method can be employed in bridging over a defect or filling in a space between the retracted ends of divided tendons. After the transplantation the tendon sheaths are carefully closed with fine silk and the operation completed in the usual manner. The limb is placed in an overcorrected position and immobilized with a plaster of paris dressing for a period of from four to eight weeks. The after treatment is very important. It consists in supporting the limb and in improving its nourishment with hot baths, massage and electricity. This should be kept up for at least six months. From the character of the distortion we should determine which muscles are paralyzed and from which source the muscular power is to be derived.

To illustrate: When the anterior tibial nerve is injured we get paralysis of the tibialis anticus, the ext. longus digitorum and the ext. proprius pollicis muscles. To correct the condition we should divide the tendon of the peroneus longus, sew the stump to the peroneus brevis and attach the proximal end of the tendon to the tibialis anticus. A flap is now taken out of the tendo Achillis passed under the peroneus and stitched to the ext. longus digitorum. The ext. proprius pollicis is attached to the tibialis anticus.

The musculo spiral nerve may be irreparably torn in fractures of the humerus causing paralysis over the area of its distribution. The hand is pronated, and the hand and fingers flexed. The condition is commonly known as wrist drop. The crippled hand can be restored in the following manner: Shorten the ext. carpi ulnaris. Separate the flexor carpi ulnaris from the os pisiform, pass it under the tendon of the ext. carpi ulnaris and attach it to the ext. communis digitorum above the bifurcation. The results in these cases is often wonderful.

Tendon transplantation is the ideal operation for paralytic club foot. The method of operating varies according to the number of muscles involved and the amount of functional power that can be transferred. The greater the number of muscles paralyzed the more complicated will be the operation. The character and the degree of deformity is dependent entirely upon the location of the paralytic

muscles and the degree of muscular power that has been destroyed.

When there is a partial or complete paralysis of the anterior group of muscles, the foot drops, the unopposed tendo Achillis contracts and the foot assumes a position of pes. equinus. Should the adductors be involved then the foot is converted into a pes. equino varus by the action of the adductors. When the posterior group of muscles are paralyzed the opposing anterior group will convert the foot into a pes. calcaneus.

Pes. valgus is the result of a paralysis of the tibialis anticus.

Time will not permit me to enter into a detailed description of the various transplantations recommended for talipes. Suffice it to say that the muscles whose functions are partly or wholly destroyed must be replaced by healthy muscles. It remains, therefore, for the surgeon to select such muscles which in his judgment can convey the most power to the paralytic group and correct the deformity.

In conclusion I wish to report a number of cases which were operated at the German Hospital by Dr. Joseph Kurtz and myself. Our results have been most satisfactory.

Case 1. Fred H., age 13. Severe laceration of the anterior surface of the arm just above the wrist. The wound was treated by a neighboring physician but he evidently forgot to suture the divided tendons. Some time after the injury it was noticed that the boy had a paralysis of the flexor muscles of the hand. A long incision was made parallel to the palmaris longus. I found that the flexor carpi radialis, the palmaris longus and the flexor sublimis digitorum had been divided. The proximal ends of the flexor carpi radialis and palmaris longus were located and stitched to their distal extremities. The proximal ends of the flexor sublimis digitorum could not be found. The distal ends were attached to the flexor carpi radialis to the flexor carpi ulnaris and to the flexor profundis digitorum. The patient made a good recovery, he has a useful hand to-day.

Case 2. William S., telegraph operator. Injury of the right middle finger resulting in a contracted cicatrix with acute flexion and ankylosis of the middle joint which greatly interfered with his work. The flexor profundis digitorum was divided and its proximal end attached to the lumbricales. There was not enough skin left to cover the wound leaving the tendons bare. This was covered by a Thiersch implantation. Result excellent.

Case 3. Nora H., age 22. Severe pes. equino valgus, the result of anterior poliomyelitis in the second year. June 2, 1906, tendo Achillis divided, the foot redressed and placed in over-corrected position and immobilized with plaster of paris dressing.

June 29, peroneus longus and one-half tendo Achillis attracted to tibialis posticus. Ext. hallucis and one-half of the extensor longus digitorum grafted upon the tibialis anticus. Plaster of paris dressing removed one month later. Result good. At present time the foot is normal in all its movements.

Case 4. Mrs. A., age 52. Paralytic equino varus in both feet. December 2, 1907, tendo Achillis divided, feet forcibly corrected with much difficulty and immobilized with plaster of paris dressing for one month.

Operation tendo Achillis split and grafted on to the peroneus longus and brevis. The ext. hallucis divided and its proximal extremity attached to the

extensor longus digitorum. The woman who had used crutches all her life now walks upon the soles of both feet without the aid of apparatus. Her gait is not graceful for she has an ankylosis in both tarsi.

Case 5. Henry A., age 7. Paralytic equino varus, result of anterior poliomyelitis in the second year. June 11, 1908, division of tendo Achillis, redressment and fixation in plaster of paris for one month. Ext. hallucis and one-half of tibialis anticus attached to the shortened ext. longus digitorum. One-half of tendo Achillis grafted on peroneus longus and brevis. Plaster of paris dressing removed in four weeks; result good.

Case 6. Miss W., age 22. Paralytic equino varus. Tenotomy, forcible correction and immobilization with plaster of paris dressing for one month. Operation ext. hallucis transplanted on to the extensor longus digitorum. Tibialis anticus split and one-half grafted in the ext. longus digitorum. Stump of ext. hallucis attached to tibialis anticus. Tendo Achillis split and attached to peroneus longus and brevis. Excellent result.

Case 7. Fred Z., age 15. Paralytic equino varus. Varus very marked. Wedge removed from the middle of the tarsus. Tendo Achillis lengthened by oblique cut. One-half of tendo Achillis grafted on the tendons of the peronei. Result good.

Case 8. Age 7, paralytic equino varus. Tenotomy, redressment, and fixation with plaster of paris for one month. Operation, one-half of tendo Achillis transplanted into the tendons of the peronei. Result good.

STRANGULATED HERNIA.*

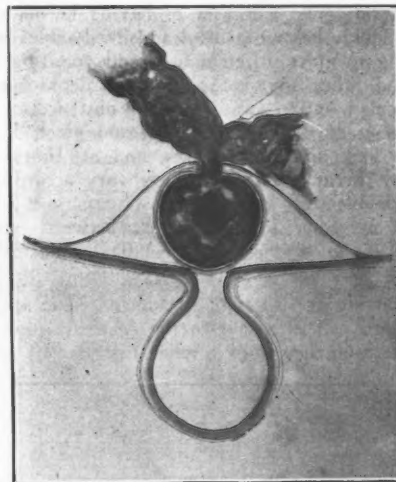
By A. MILES TAYLOR, M. D., San Francisco.

I have selected for my subject, Strangulated Hernia, its frequency among railroad men and the necessity of early operation in all forms of hernia. My object in bringing this most common subject before you to-day is to awake interest in one of the most neglected of all conditions demanding immediate surgical intervention. If herniae, both large and small, were diagnosed early and corrected through an operation, we would not be called upon so frequently at most any hour of the day or night to deal with this, one of the most grave conditions in surgery and one that few doctors in general practice have not had experience with.

Herniae of the abdominal viscera may be internal or external. Internal—where the displacement is into another cavity through some opening in the mesentery or omentum or adhesion. External—protrusion through the abdominal wall of the sac and its contents. The predisposing causes are imperfect closure of the umbilicus and inguinal and crural canals, weakened state of the mesentery and accumulations of fat in the peritoneum. The most frequent exciting cause is strain.

We have various forms of hernia, namely, inguinal, direct, and oblique; femoral, umbilical, obturator, sciatic, lumbar; bladder, retroperitoneal, diaphragmatic, epigastric, etc., but the one we meet most frequently is the oblique inguinal and the principal one I have taken up.

Before going any further, I wish to briefly refresh your memory with regard to the anatomy of the part, and the structures we must deal with.



Strangulated direct inguinal hernia, reduced en masse.

The first covering is the skin, the fascia with fat, aponeurosis of the external oblique muscle, which is attached to the symphysis pubis by one portion and reflected by the other from the anterior superior spine of the ilium to the spine of the os pubis, forming Poupart's ligament, being reinforced at the point of the external ring by the intercolumnar fibres. Underneath this, over the cord is the cremaster muscle. Below this fascia we find the spermatic cord consisting of the vas deferens, arteries, veins, nerves and lymphatic vessels. On the inner side we find the conjoined tendon formed by the internal oblique and transversalis aponeurosis and the peritoneum. The deep epigastric artery runs upward and inward from the external iliac to the center of the rectus abdominus muscle, passing vertically between the two rings lying between the transversalis fascia and the peritoneum, and must be avoided in operating. The more common forms of hernia descend externally to this vessel.

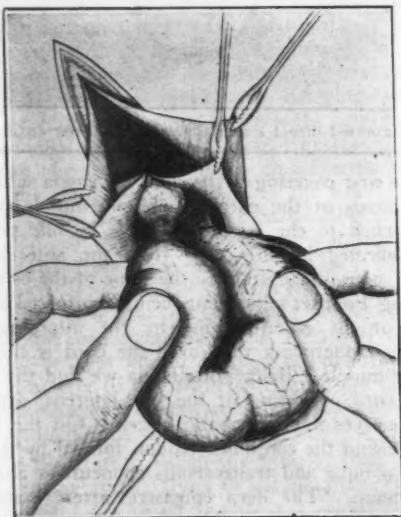
In giving these parts a few moments of study we can readily see how the different forms of hernia are formed and with what ease this condition can be corrected surgically. One can easily understand how in days of preaseptic surgery this condition was neglected, but under our present method of aseptic surgery there is no excuse for neglect. We must lay aside those old notions our predecessors had and methods they employed, namely taxis, truss, etc., sometimes reducing the strangulated portion en masse, and the poor patient dying of the gangrenous obstructed or ruptured bowel.

I wish to state before I go any further that this is an emergency condition and the only appropriate treatment is a surgical one. Our chief source of danger is septic absorption, and in order to avoid this the condition should be properly dealt with before the incarcerated bowel has ceased to be viable. Very frequently the patient is not brought to us until after repeated efforts at reduction; a long wait with his powers of resistance almost gone, not due to the gangrenous condition, but to sepsis.

* Read at the Eighth Annual Meeting of the Pacific Association of Railway Surgeons, San Francisco, Aug., 1910.

As a rule the diagnosis is not a difficult one, for the patient gives a history of having hernia which has suddenly become painful and irreducible, bowels refusing to move, often nausea and vomiting ensuing and other signs of circulatory depression, all symptoms pointing to an intestinal obstruction. The expression of the face is drawn and pinched, with sallow look and sunken eyes, and at times is a clammy sweat. The symptoms vary according to the amount and duration of obstruction. It is hardly necessary to differentiate between an inflamed and an obstructed irreducible hernia for both require immediate surgical intervention.

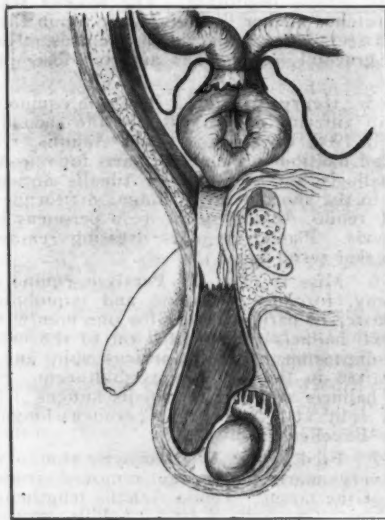
Reporting 200 cases upon which I have operated I wish to call attention to the death of three and the condition they were in when first seen by me.



Showing constricted bowel.

One was a man 39 years of age who had eaten canned tomatoes three days previously; he had what was supposed to be ptomaine poisoning and was treated with the usual cathartics given freely but with no result. Bowels did not move and patient grew worse. On the evening of the third day he entered the hospital, and upon examination I found the following condition: Temperature 97, pulse 150, stercoraceous vomiting, clammy sweat, tympanites, sunken eyes, greenish hue of skin, pinched countenance and at this time no pain. Yet the pain in the early part of the illness had been severe, especially at the point of hernia, in fact more or less all over the abdomen. The hernia which was an oblique inguinal had existed for some months, had been small and reducible; it was now a large irreducible mass. The skin and tissues about the seat of hernia were red and swollen. Upon opening the sac the constriction of the bowel was so high that a hernio-laparotomy was necessary in order to reach the constricted band. A greater portion of the bowel was paralyzed and the mesenteric veins studded with thrombi. The patient only lived a few hours after the operation.

The second case was that of a woman about 44 years of age, and almost similar in symptoms to the above, except she had not eaten canned food. This patient had suffered with an oblique inguinal hernia for years but for the past four days, previous to coming under my care, complained of pain at seat of hernia. The family physician was called in and

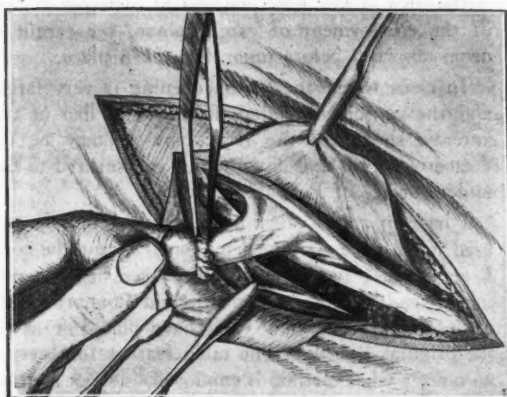


Strangulated oblique inguinal hernia, false reduction through circular rupture of sac.

recognized the strangulation, applied ice and gave cathartics with no result. Upon opening the sac and extending incision up several inches the bowel was found constricted at seat of hernia, also about eight inches above by a band. The bowel between these constrictions was gangrenous and this portion was removed. However the remaining bowel failed to regain its functions and the patient died on the following day.

The third case was that of a man 73 years of age weighing 260 pounds who had had a double inguinal hernia for twenty years. I saw this case fifty-two hours after strangulation on both sides. When I was called I was told by the attending physician that it was a strangulated inguinal hernia of the right side which he had tried to reduce and failed. Upon examination I found a strangulation of both sides. The hernia of the right side was 26 inches in circumference and extended 12 inches from the external ring to the bottom of the scrotum. That of the left side was about one-third the size of the right. The patient complained of severe pain in the left side and had suffered with severe pain in the right side which had ceased about twelve hours before. The temperature was 104, pulse 150, irregular and intermittent, respiration labored; all the symptoms pointed to a high degree of sepsis. The entire abdomen was distended and tympanitic. Upon opening the sac a large amount of sero-sanguinous fluid escaped. The sac was filled with omentum, caecal end of colon and small intestines, a loop of which was constricted by bands of adhesions. The omentum was inflamed and discolored in spots. The intestines were liberated, douched with hot salt solution and returned. The omentum was ligated and cut off. The sac was freed, cut off and transfixed and the wound closed by placing the cord below the conjoined tendon and Poupart's ligament. Drainage was made through counter opening in the side. In opening the sac of the left side there was an escape of a sero-sanguinous fluid. The sac was filled with small intestines which were adherent and ruptured at the ring. The incision was carried up, the intestines liberated, the rupture repaired with a few Lembert sutures, douched and replaced. The parts were closed and drained the same as the other side. The patient died of general sepsis the following day.

If these three cases had been operated upon as soon as the strangulation appeared, no doubt they



Freeing of sac.

would be living to-day. It is true that small femoral, sciatic and obturator hernias are often overlooked. One must not overlook torsion of the spermatic cord, strangulation of an undescended testicle, and suppurative lymphadenitis in the groin but if one dissects with caution there is no danger.

I wish to show you a few drawings illustrating how strangulated hernias are often reduced en masse.

You will observe that the hernial sac and its contents have been carried through the external ring without having changed their relations (Fig. 1), and the constriction persists. This is more common in the direct form of inguinal hernia in recent cases in which the sac is not adherent.

You will observe that the neck of the sac is torn loose from the rest of the sac and has been reduced with the bowel, the strangulation still being maintained (Fig. 2).

There are six principal points which must be observed in dealing with strangulated hernia.

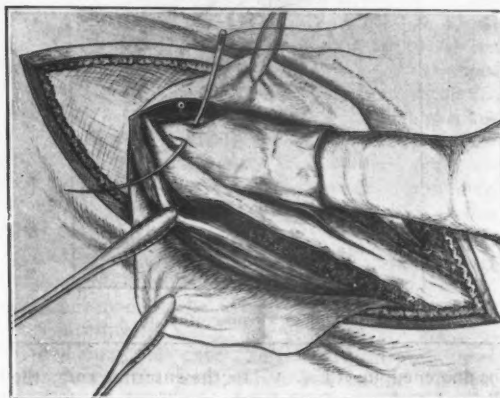
1. Incision and freeing of the sac. 2. Opening of the sac and care of the strangulation. 3. Care of the sac. 4. Care of the cord. 5. Plastic of abdominal wall. 6. After treatment.

The operation is not difficult if one is familiar with the parts. One need not fear cutting into the intestines, for before they can be reached the sac must have been opened which will be announced by the escape of a sero-sanguinous fluid. A close eye must always be kept on the bowel at the site of the constriction, which is most apt to be at internal ring but may be at any point of the canal (Fig. 3), at times high above the internal ring, demanding, besides a division as in ordinary hernia operations, a herniolaparotomy.

After thorough preparation of the field of operation, the incision through the skin and fat to the aponeurosis of the external oblique muscle is made, extending from the point of the internal ring to the spine of the pubes, and at times down to the middle of the scrotum.

After exposure of the aponeurosis it is incised the entire length from one ring to another. One can easily recognize it by the direction of its fibres and its shiny look. It is always well to hold aside these

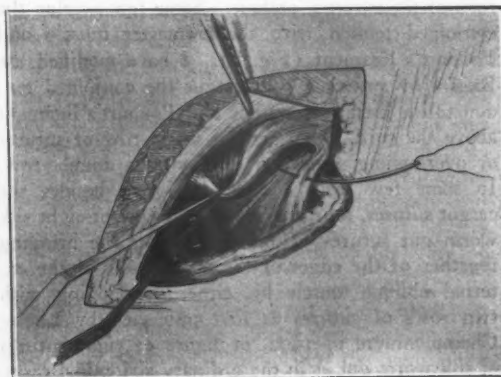
two surfaces with a pair of forceps. We now come to the sac which should be separated from the surrounding tissue, then opened to its full extent (Fig. 4), dividing the constricting bands. It is here that at times it is necessary to combine a laparotomy with a hernia operation, instead of passing a grooved director upward and dividing constrictions as is done by some surgeons.



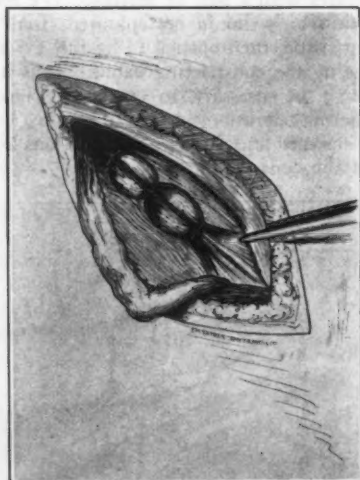
Care of sac.

The greatest care should be exercised in the examination of the bowels, never returning them unless the circulation is sufficiently reestablished, which can readily be accomplished by douching with hot normal salt solution and hot cloths. Should it be injured a few Lembert sutures may be all that is necessary, but one may be obliged to resect a portion or make an artificial anus. It is sometimes advisable to wrap the loop in moist gauze for ten to twelve hours and examine it again. An enterectomy is at times the ideal procedure since it eliminates a source of danger and permits of a radical cure, however none but those skilled in intestinal work should undertake it. An artificial anus can be made at the point of the hernia, or near McBurnay's point, and the radical cure operation performed.

After the bowel has been reduced, the sac should



Suturing of conjoined tendon to Poupart's ligament, cord held aside.



Complete closure of floor.

be loosened up (Fig. 5) to the internal ring, then ligated and transfixed to the fascia of the external oblique muscle, always making sure that the sac is free of omentum and bowel. In case a radical cure is possible one must proceed to repair the floor, allowing enough space for the spermatic cord. This can easily be done by suturing the conjoined tendon to Poupart's ligament, overlapping same in some cases. This generally requires from five to six sutures (Fig. 6) which can be of special catgut. The cord, having been held aside, is now replaced (Fig. 7) and covered by the divided aponeurosis of the external oblique muscle, this being sutured as the layer below with catgut. The next step is bringing together of the skin. The technique I have just given is that described by Bassini a number of years ago but which has been somewhat modified by a number of surgeons.

Quite a few surgeons do not bring up the cord, merely bringing up the sac, transfixing same, then suturing together the fibres of the conjoined tendon and Poupart's ligament, also overlapping the aponeurosis of the external oblique. Some few overlap the conjoined tendon with the cremaster muscle and Poupart's ligament (Fig. 8). I have modified the Bassini by suturing with catgut the conjoined tendon to the cremaster muscle and Poupart's ligament above the cord, either with a single row of sutures or overlapping same and employing a double row. In some few cases I have employed, besides the catgut sutures, four or five double figure-of-eight silk worm gut sutures. The next step is the bringing together of the edges of the aponeurosis of the external oblique muscle by, either overlapping with two rows of sutures as first published by Lucas-Championnière in 1902, or figure of eight sutures of silk worm gut as in the ordinary abdominal cases.

My object in modifying the operation in this manner is that the silk worm gut sutures can be

withdrawn at any time one sees fit, whereas in case of the employment of catgut alone, the catgut is often absorbed before union has taken place.

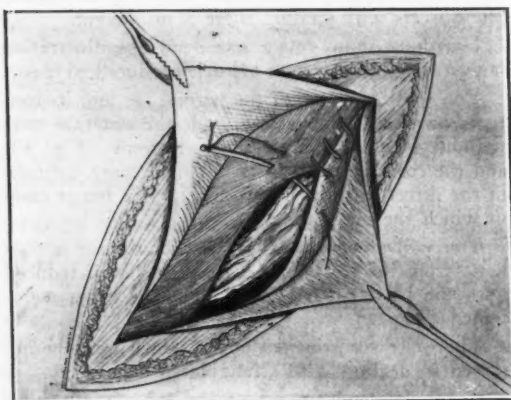
In cases where the hernia opening is very large, and the conjoined tendon atrophied, a flap of the anterior sheath of the rectus muscle may be reflected outwards and downwards, and sutured to the under surface of Poupart's ligament.

I have in a few cases split the rectus muscle and used it with the conjoined tendon. As for the cord I generally leave it below the layer of the conjoined tendon, cremaster muscle and Poupart's ligament, but in some few cases have placed it as in the original Bassini. The main feature to observe, no matter what method is employed, is strict asepsis.

The Kocher operation is not applicable in strangulated cases.

The skin can be brought together by Michel clamps, silk worm gut or horse hair.

One must not lose sight of the complications, one of the most frequent being adhesions between the



Cord placed posterior to conjoined tendon and Poupart's ligament.

bowel, omentum and sac. This requires patience and careful work. All raw surfaces must be taken care of. The bladder being near at hand may be cut into if care is not used. The appendix and most any abdominal organ may be found in the sac and must be dealt with accordingly.

The next most frequent after the form just discussed is the umbilical form, which is much easier to deal with. The femoral variety is even more urgent than the inguinal for gangrene is liable to develop earlier.

I recently operated on a case of femoral hernia that had become strangulated. The only point I wish to bring out in this case is, that this man had been examined and fitted upon two occasions with a truss for inguinal hernia, which he was wearing when he came to me, but which aggravated instead of benefited the condition. The parts were exposed by an incision parallel to and about one-third of an

inch below Poupart's ligament. A large sac was found, constructed a little below Poupart's ligament, and filled with omentum and bowel. The sac above the constriction was very large. In this case I returned the bowel, removed the omentum, transfixed the sac and brought the parts together.

In the femoral variety, besides suturing the Pectineus muscle and fascia to Poupart's ligament with mattress stitch, I use about three figure of eight silk worm gut sutures removing them in about three or four weeks. Care must be taken not to cut into the femoral vein which lies external to the hernial opening. The sac is dealt with as in inguinal hernias, namely, transfixed to Poupart's ligament.

In obturator hernia it will be necessary to expose the sac by an incision extending from the spine of the pubes downward three or four inches, about a finger's breadth internal to the femoral artery, the pelvis being elevated and thigh flexed and adducted.

The after treatment is the same as in ordinary abdominal cases. I let my patients up in about two weeks and have them wear some sort of support for several months. In this matter of hernia I feel like Murphy does in appendicitis; it is a constant source of danger and one can never know at what moment it may become strangulated, therefore all cases should be operated as soon as a diagnosis is made.

THE LATE DR. G. L. SIMMONS, OF SACRAMENTO.

Gustavus Lincoln Simmons was born in Hingham, Mass., March 13, 1832. On his father's side he was a lineal descendant of Moses Simmons, a member of the Pilgrim Colony by the ship "Fortune" following the "Mayflower" in 1621 and, on his mother's side, of Benjamin Lincoln, who came from Hingham, England, and founded Hingham, Mass. He received his preliminary education in the public schools and Derby Academy of his native town. When but a boy of 17, in 1849, he sailed from Boston to California by the brig "Curacoa," which foundered on the coast of the Azores, but finally reached San Francisco some nine months later, in 1850. He remained but a short time in San Francisco and then came to Sacramento, which was his home continuously until his death.

As a clerk he entered the old Boston Drug Store which was then situated on the north side of J street between Front and Second. Cholera and gambling were at their height at that time and gave him abundant opportunity to make observations both medical and surgical. He immediately became interested in medicine and in 1853 took passage from San Francisco by the ship "Yankee Blade" which was wrecked in the Santa Barbara Channel where he lost his library and other belongings. A part of these books were recovered some 40 years later and are still in possession of his family. He finished his medical education at Harvard University in 1855 and returned to California in 1856, beginning practice in Sacramento at once.

He made three trips to Europe for the study of his profession in 1866, 1871 and 1896. He was a charter member and very important factor in the

organization of the Sacramento Society for Medical Improvement which was established and held its first meeting on March 17, 1868. Of this Society he was a continuous, active, loyal member for more than 42 years. The records of the Society will probably show that no other member during this long period has been more regular in attendance of its monthly meetings or more active in its deliberations. He allowed no other business or pleasure to interfere with what he believed to be his duty to the Society and to the Medical Profession.

He was one of the founders of the Medical Society of the State of California, of which particularly in its earlier history when he had more time and strength, he was an active, efficient and prominent member. In 1896 he was elected its president in which capacity he served the Society with his usual zeal and efficiency.

He was a member of the Mass. State Medical Society and of the American Medical Association, and Chairman of the Committee of Arrangements at its meeting in San Francisco in 1871. He contributed numerous papers to the medical press, read either before the Sacramento Society for Medical Improvement or before the State Society. In 1859 and 1860 he was County Physician and did the surgery for the County Hospital for some time after the election of his successor, Dr. Donaldson.

In his earlier life he did a great deal of surgery, wiring the tendo-Achillis for the first time successfully, opening the knee joint successfully under alcohol before the days of Listerism, ligating the carotid, doing splenectomy, ovariectomy and all of the operations of that time with more than usual success. He ascribed his results largely to the use of alcohol in cleansing the skin preparatory for operation and after the vogue of aseptic and antiseptic surgery often spoke of the value of alcohol as an antiseptic. Subsequent observation has substantiated his claims.

He was Surgeon Major before and during the Modoc War; member of the City Board of Health for a long period; Commissioner in Lunacy for more than 20 years; United States Pension Surgeon; the first Secretary of the City Board of Education, acting as School Superintendent; one of the founders and presidents of the City Free Library; an active member of various improvement associations and other civic bodies and president of the Board of Trustees of the Marguerite Home.

He founded and long maintained almost unaided, the little hospital known as Ridge Home and later merged into the present Sisters' Hospital at 23rd and R streets. He was chiefly instrumental in founding the City and County Dispensary and was an active member of the Board of Freeholders which framed the present charter of the City of Sacramento.

His activities as a citizen were varied, numerous and efficient. More than thirty years ago he gave the question of water supply a very thorough study both in general and in its application to the City of Sacramento. He became an early, consistent and persistent advocate of a well supply.

His professional activity continued to the time of his fatal illness. When the end visibly approached and death, unmasked, cast its shadow across his pathway he uttered no word of fear or repining but met the final summons with the calm and courage that characterized his life.

To family, friends and home he was preeminently devoted. For his family in health, he provided with a generous hand and in illness lavished on them his own loving care as few men ever do. To his home he gave great personal attention, beautifying its grounds with rare shrubs and vines which he planted and nurtured with his own hands. For his friends, even when busiest, he always found time not only for personal intercourse but even for a voluminous correspondence. His lifelong friendships, both in and out of the profession were notable.

He was an ardent lover of nature. When worn with work he was wont to withdraw to his orchard at Orangevale to dig and plant and graft and bud and prune until health and strength returned. In this was the chief recreation of his long life. He knew more of orchards and vineyards and gardens than many a man who has spent his whole life in them.

He was a wise counselor and generous friend of the young and struggling physician. A score of younger men, some of them approaching the sere and yellow leaf, recognized in him a great benefactor. More than one has said, and truthfully, "He was the best friend I ever had."

As a physician he was indefatigable; no labor was too great for him and no day too long. His profession he viewed almost wholly from its scientific and humanitarian aspects. Among his patients he saw neither rich nor poor, only men and women with diseases to be cured or relieved. No sordid, selfish or commercial motive desecrated the temple of his mind. He was a noble member of a profession made noble by the standards which he earnestly espoused and religiously observed. When the fog of commercialism clears a little from our professional eyes we shall perceive that he "saw life steadily and saw it whole." In view of these facts your committee offers the following resolutions:

Resolved, That in the death of Dr. Gustavus Lincoln Simmons the young physician has lost a wise counselor and generous friend, the community a model citizen, his family a devoted husband and father and this Society a loved and loyal member whose example was an inspiration to us all;

Resolved, That we, the Sacramento Society for Medical Improvement, extend to his family in their bereavement our deepest and sincerest sympathy.

(Signed): W. A. BRIGGS.
H. L. NICHOLS.
G. A. WHITE.

CORRESPONDING EDITORS

Corresponding Editors Elected by the County Societies.

(In this space will be printed the news matter or items of interest contributed by the Corresponding Editors from month to month.)

Dr. C. L. Browning, Chico, Butte Co.

Dr. Geo. H. Kress, Bradbury Bldg., Los Angeles, Los Angeles County.

Dr. Geo. E. Tucker, Riverside, Riverside County.

Dr. F. O. Nash, Hollister, San Benito County.

Dr. Gayle G. Moseley, Redlands, San Bernardino County.

Dr. A. Miles Taylor, 209 Post street, San Francisco, San Mateo County.

Dr. T. A. Stoddard, Santa Barbara, Santa Barbara County.

Dr. Chas. M. Richards, San Jose.

LOS ANGELES COUNTY MEDICAL ASSOCIATION.

The following resolutions were recently unanimously passed as the sense of the Board of Councilors of the Los Angeles Medical Association:

In passing these resolutions, the Board of Councilors wished in no way to curtail the rights of any individual member. It was the belief of the Board of Councilors that no man can fly two flags at one time, and that members who are receiving the benefits and privileges of the society should not at the same time work hand in hand with such groups of persons who practice the healing art, but who by the low standards of their official institutions and organizations are preventing the forward movement in higher educational standards and professional attainments for practitioners of the healing art.

The resolutions adopted are as follows:

RESOLUTIONS REGARDING OSTEOPATHY.

Whereas, Many of the Osteopaths of California are from all accounts practicing medicine and surgery, in violation of the original intent of the State Medical Law, and

Whereas, The educational standards of the Osteopathic Colleges of California are on a common school instead of a high school basis of preliminary education; and upon a three-year, instead of a four-year course of professional training; therefore be it

Resolved, That it is the sense of the Board of Councilors of the Los Angeles County Medical Association that these things are contrary to the best interests of medical education and of the healing art in California, and be it further

Resolved, That in the opinion of the Board of Councilors, while these conditions last, it is detrimental to the best development of the healing art and of the public health interests of this State and County, for members of the Los Angeles County Medical Association to professionally associate with Osteopathic institutions or Osteopathic practitioners, to the extent of giving the impression that such professional association has the countenance and good will of the regular profession, which is pledged to high educational and ethical standards, and be it further

Resolved, That it is the sense of the Board of Councilors of the Los Angeles County Medical Association that under these conditions no loyal member of this Association should become connected with an Osteopathic institution, and that no member of this Association should professionally consult with Osteopaths under present conditions, except in such cases where the health and life of the patient is in imminent danger, and be it further

Resolved, That a copy of these resolutions be printed in the Bulletin of the Association, and the attention of members otherwise called thereto, if necessary.

The Board of Councilors also adopted a plan for a system of "follow up" letters and a collection bureau, after a plan devised by the Secretary of the Association.

Each member of the Association was given twenty-five of each of the five letters and a booklet containing form blanks for notations, claim forwarding and delinquent blanks.

It is hoped the system will prove of real value and, if so, a report thereon will be made at the next meeting of the State Medical Society.

* * *

In preparation for the meeting of the American Medical Association, which will be held in Los Angeles in June, 1911, the following committees have been appointed. The general chairman will be Dr. A. Bert Ellis, and the general secretary Dr. George H. Kress:

1. Executive Committee.

Dr. H. Bert Ellis, chairman; Dr. Walter Lindley, treasurer; Dr. George H. Kress, secretary; Dr. W. Jarvis Barlow, Dr. Fitch C. E. Mattison, and the chairman of each standing committee.

2. Finance Committee (Incomplete).

Dr. Fitch C. E. Mattison, chairman; Dr. Chas. Bryson, secretary; Dr. W. T. McArthur, treasurer. District Finance Chairmen—Pasadena, Dr. H. H. Sherck; Pomona, Dr. Frank Garcelon; Santa Monica, Dr. W. H. Kiger; Long Beach, Dr. A. C. Sellery.

3. Committee on Bureau of Information.

(Incomplete).

Dr. J. Y. Oldham, chairman; Dr. Rea Smith, Dr. R. F. Hastreiter, Dr. C. H. Whitman.

4. Committee on Reception at R. R. Stations.

(Incomplete).

Dr. W. R. Molony, chairman; Dr. George A. Laubersheimer, Dr. G. A. Scroggs, Dr. E. J. Cook, Dr. Raymond G. Taylor.

5. Committee on Hotels and Headquarters.

(Incomplete).

Dr. W. LeMoine Wills, chairman; Dr. Titian J. Coffey, Dr. E. A. Bryant, Dr. A. L. Macleish.

6. Committee on Halls (Incomplete).

Dr. John T. Ferbert, chairman; Dr. Fred C. Bicknell, vice-chairman; Dr. E. W. Fleming, vice-chairman; Dr. Wm. Dodge, vice-chairman.

7. Committee on Section Meetings Places.

(Incomplete).

Dr. Albert Soiland, chairman; Dr. Clarence W. Pierce, Dr. Fred C. Shurtleff; Section on Practice Medicine, Dr. Dudley Fulton; Section on Surgery, Dr. E. R. Smith; Section on Obstetrics, Dr. M. L. Moore; Section on Diseases of Women, Dr. Carl Kurtz; Section on Ophthalmology, Dr. T. J. McCoy; Section on Laryngology and Otology, Dr. Hill Hastings; Section on Nervous and Mental Diseases, Dr. H. G. Brainerd; Section on Preventive Medicine and Public Health, Dr. L. M. Powers; Section on Diseases of Children, Dr. L. M. Moore; Section on Pharmacology and Therapeutics, Dr. Theodore G. Davis; Section on Dermatology, Dr. Ralph Williams; Section on Pathology and Physiology, Dr. John C. Collier; Section on Stomatology, Dr. Frank Cook.

8. Committee on Post-Office, Telephones, etc.

(Incomplete).

Dr. C. B. Nichols, chairman; Dr. A. C. Rogers, Dr. Guy Cochran.

9. Committee on Registration of the Los Angeles Members (Incomplete).

Dr. W. W. Beckett, chairman; Dr. H. M. Voorhees, Dr. H. G. Marxmiller, Dr. E. M. Lazard.

10. Committee on Registration of California Members (Incomplete).

Dr. Jos. M. King, chairman; Dr. Langley Porter, Dr. Herbert P. Barton, Dr. W. W. Hitchcock.

11. Committee on Commercial Exhibit (Incomplete).

Dr. W. H. Kiger, chairman; Dr. Chas. E. Zerfing, Dr. E. T. Dillon.

12. Committee on Printing (Incomplete).

Dr. J. H. Seymour, chairman; Dr. C. C. Browning, Dr. J. S. Hall.

13. Committee on Program (Incomplete).

Dr. O. O. Witherbee, chairman; Dr. E. Clarence Moore, Dr. Frank D. Bullard.

14. Committee on Badges (Incomplete).

Dr. F. M. Pottenger, chairman; Dr. James T. Fisher, Dr. F. W. Steddon.

15. Committee on Non-Affiliated Associations.

(Incomplete).

Dr. Granville MacGowan, chairman; Dr. J. H. McBride, Dr. W. H. Roberts, Dr. Henry Stchman.

16. Committee on Entertainments (Incomplete).

Dr. Chas. W. Bryson, chairman; Dr. P. C. H. Pahl, Dr. A. T. Newcomb.

17. Committee on Section Entertainments.

(Incomplete).

Dr. Andrew Stewart Lobingier, chairman; Dr. W. W. Richardson, Dr. W. M. Lewis.

18. Committee on President's Reception.

(Incomplete).

Dr. W. Jarvis Barlow, chairman; Dr. Norman Bridge, Dr. Wm. A. Edwards, Dr. Milbank Johnson.

19. Committee on Press and Publicity (Incomplete).

Dr. George H. Kress, chairman; Dr. Walter Lindley, Dr. Wm. Duffield, Dr. P. G. Cotter.

20. Assistant Editor of the Bulletin (Incomplete).

Dr. Donald J. Frick.

21. Committee on Scientific Exhibit (Incomplete).

(Appointed by the American Medical Association Committee.) Dr. Stanley P. Black, Los Angeles representative.

22. Committee on Reception to Ladies (Incomplete).

(To be appointed.)

THE MEDICAL LAW.

(The attorney for the State Board of Medical Examiners has carefully prepared the following statement of facts relating to the medical law and the procedure under it, with the various citations of cases and decisions sustaining its provisions. It is the desire of the Board that copies of this document be placed in the hands of all judges in the state, and of all prosecuting attorneys so that they may very readily be able to look up any particular point concerning the law or the method of procedure.)

Reprints of this document may be had upon application to the Secretary of the Society, Dr. Philip Mills Jones, Butler Building, San Francisco.)

THE STATUTE REGULATING THE PRACTICE OF MEDICINE IN CALIFORNIA IS A PROPER EXERCISE OF THE POLICE POWER.

The constitutionality and regularity of this statute (See Cal. Stat., 1907, p. 255 and amendment, 1909, p. 418), has been fully tested and upheld by decisions of our court of last resort. Any attack upon the validity of the statute itself may be answered by reference to the following cases decided in the California courts, to which are appended some cases from other states having a similar statute:

Ex Parte Gerino, 143 Cal., 412;
Ex Parte Frazer, 54 Cal., 94;
People vs. Boo Doo Hong, 122 Cal., 606;
Ex Parte McNulty, 77 Cal., 164;

In re Bulger In re Merrill, 45 Cal., 553.
 Ex Parte Whitley, 144 Cal., 167;
 Arwine vs. Bd. of Med. Examrns., 91
 Pac. (Cal.), 319;
 De Yoe vs. Superior Court, 140 Cal., 476.
 Iowa Ec. Med. Assn. vs. Schrader, 20 L.
 R. A., 259;
 Dent vs. West Virginia, 129 U. S., 114;
 State Bd. vs. Fowler, 50 La. Ann., 1358;
 Scholle vs. The State, 90 Md., 729; 50
 L. R. A., 411;
 People vs. Fulda, 52 Hun., 65; 4 N. Y.
 Supp., 945;
 Board of Med. Examiners vs. Fowler, 24
 South, 809;
 State vs. Davis, 92 S. W., 407;
 Antle vs. State, 6 Tex. Crim. App., 302.

PROCEDURE.

In drawing the complaint it will be sufficient to follow the language of the statute (See Stat. 1907, p. 257), Sec. 13, which reads as follows:

"Any person who shall practice or attempt to practice or advertise or hold himself out as practicing medicine or surgery, osteopathy, or any other system or mode of treating the sick or afflicted, in this state, without having, at the time of so doing, a valid, unrevoked, certificate, as provided in this act, shall be guilty of a misdemeanor . . ."

In the case of Boo Doo Hong the complaint, which followed the wording of the then statute closely, was approved: "Wilfully and unlawfully practicing medicine in the State of California without having first procured a certificate to so practice as required by law" (122 Cal., p. 607).

The negative fact—that the defendant *does not* have a certificate—while it must be alleged, need not be proved the burden is upon the defendant:

" . . . the burden is upon the defendant to show that he has a certificate to practice medicine as provided by law, and, if he failed to prove that he had such certificate, then it must be taken as true that he had not procured a certificate to practice medicine."

Ex Parte Boo Doo Hong, 122 Cal., 606.
 To the same effect see

Williams vs. People, 20 Ill. App., 92;
 Benham vs. State, 116 Ind., 112;
 People vs. Nyce, 34 Hun., 298 (N. Y.).
 People vs. Fulda, 52 Hun., 65; 4 N. Y.
 Supp., 945.

Issuing signed circulars and testimonials:

Benham vs. State 116 Ind., 112; 18 N. E.
 454.

Exhibiting a sign as "Dr. ———, magnetic healer," being called to visit sick persons and treating them, and making certificate of death and practitioners' sworn statement.

People vs. Phippin, 70 Mich., 6; 37 N.
 W., 888.

State need not prove actual receipt of compensation,
 State vs. Hale, 15 Mo., 607 (Reprint 407).

Attending a single case and holding oneself out to the community as a physician.

Antle vs. State, 6 Tex. Crim. App., 202.

EXCEPTIONS.

The legislature of California has enacted laws regulating the practice of certain forms of manual treatment for the sick and providing for certificates to practice. Osteopaths and naturopaths, *holding certificates*, may practice.

Stat. 1909, p. 418.

Stat. 1907, p. 259.

Section 17 (Stat. 1907, p. 259), contains the following:

"Nor shall this act be construed so as to discriminate against any particular school of medicine or surgery or osteopathy, or any other system or mode of treating the sick or afflicted, or to interfere in any way with the practice of religion; provided, that nothing herein shall be held to apply to, or to regulate, any kind of treatment by prayer."

DEFINITIONS—SPECIFIC ACTS.

What constitutes the practice of medicine, and what acts constitute a violation of statutes, similar to ours, regulating the practice of medicine, has been judicially determined. Some cases are here given.

"The practice of medicine may be said to consist in three things: First, in judging the nature, character and symptoms of the disease; Second, in determining the proper remedy for the disease; Third, in giving or prescribing the application of the remedy to the disease."

Underwood vs. Scott, 23 South (Kan.,
 1890), 942.

"Medicine, in its ordinary sense, as applied to human ailments, means something which is administered, either internally or externally, in the treatment of disease, or the relief of sickness. It may be applied externally and it need not necessarily be a substance which may be seen and handled. It may consist of electricity conveyed by instruments or the human hand. And he whose profession it is to prescribe and administer this, after diagnosing the complaint, is a physician as commonly and ordinarily understood. Thus, the statute would include what is known as a medical clairvoyant who visits sick patients, examines their condition, determines the nature of the disease, and prescribes the remedies deemed most appropriate."

Kansas City vs. Baird, 92 Mo. App., 208.

Among those acts which have been judicially declared to be violations of statutes regulating the practice of medicine, are the following:

The assignee of a patent medicine cannot administer it for a fee, unless he is licensed to practice.

Thompson vs. Staats, 15 Wend. (N. Y.),
 395;

Jordan vs. Overseers of Dayton, 4 Ohio
 (4 Ham.), 294.

Attending and prescribing, and holding oneself out as competent to prescribe.

State vs. Van Doran, 109 N. C., 864;
 14 S. E., 32.

Treating a particular person for a certain disease and receiving pay therefor.

Richardson vs. State, 47 Ark., 502; 2 S.
 W., 187.

SAN FRANCISCO COUNTY MEDICAL SOCIETY PROCEEDINGS.

The regular meeting of the San Francisco County Medical Society was held September 13, 1910.

The recommendation of the Executive Committee that the Society be divided into four sections, meetings to be held on each Tuesday of the month, was put to the members of the Society for vote. The members voted in favor of this recommendation, and the secretary was instructed to report to the Board of Directors for further action.

The following applicants were duly elected to membership: P. Sumner, L. A. Smith, A. Garceau, H. Damkroeger, E. Goodman, C. Johnson, D. B. Plymire, R. L. Logan, E. Lagan, T. A. Rottanzi, F. M. Sponigle, C. A. Walker, F. A. Kinslow.

The scientific program was as follows:

1—Report of a Case of Infantile Paralysis, James T. Watkins.

2—Demonstration of Kidney Plates and report of a Case of Bilateral Nephrolithiasis, W. P. Willard. Discussion opened by M. Krotoszyner.

3—Urological Atrocities, V. G. Vecki. Discussion opened by Henry Meyer.

4—Treatment of Acute Gonorrheal Epididymitis—Conservative Contrasted with Surgical, J. C. Spencer (will be published elsewhere). Discussion opened by R. L. Rigdon.

5—Remarks upon the Treatment of Impotentia Coeundi and Sexual Neuresthenia, A. B. Grosse.

These papers were discussed by the members present, and papers and discussion will appear in a later number of the Journal.

During the month of October four meetings were held. The following constituted the scientific programs:

Section on Medicine, Tuesday, October 4.

1—The Menace of Tropical Diseases to the State of California, Herbert Gunn.

2—Case Presentations by H. D'Arcy Power, Louis D. Mead, W. C. Alvarez.

General Meeting, Tuesday, October 11.

1—Presentation of a Case, Wm. C. Voorsanger.

2—Improved Technic in the Use of the Tiersch Graft Following the Radical Mastoid Operation, Cullen F. Welty.

3—Quantitative Dietetics, H. D'Arcy Power.

The following applicants were duly elected to membership: J. G. Null, F. S. Emmal, F. A. Hamlin, P. A. Kearney, C. E. Schoff, M. Nakabayashi, E. S. Breyfogle, G. S. Wrinkle, J. F. Sullivan, K. Kurozawa.

After adjournment a collation was served.

Section on Surgery, Tuesday, October 18.

1—The Open Treatment of Fractures, Chas. G. Levison.

2—General Discussion on the Treatment of Fractures, T. W. Huntington, Stanley Stillman, Harry M. Sherman, Emmet Rixford, Wallace I. Terry.

3—The Transplantation of Bone, S. J. Hunkin.

Eye, Ear, Nose and Throat Section, Tuesday, October 25.

1—Exhibition of Cases, E. C. Sewall, F. A. Hamlin.

2—Streptococcus Mucosis in Acute Otitis Media, with Report of Cases, Harry B. Graham.

Section on Medicine, Tuesday, November 1.

Scientific program:

1—Presentation of Medical Cases, Wm. Fitch Cheney, Louis D. Mead, H. D'Arcy Power.

2—Case Reports, J. Wilson Shields.

3—Demonstration of Specimens, René Bine.

Detailed reports of these proceedings will appear in a later issue of the Journal.

General Section, Tuesday, November 8.

Scientific program:

1—Metastases of Carcinoma in the Ovaries and Pouch of Douglas, Julius Rosenstirn.

2—The Modern Conception of Functional Nervous Diseases with Special Reference to Neurasthenia, Gilbert V. Hamilton.

3—Demonstration of Tropical Protozoa (trypanosoma, spirilla and spirochetes), Dudley Tait.

In accordance with the by-laws, the President presented a list of thirty nominees for the Board of Directors for the ensuing year. Nominations being received from the floor, several other names were added to the list. The members will no doubt by this time have received their ballots with the names of the candidates; they are to vote for twenty-one and return their ballots to the office of the Secretary at their very earliest convenience. The following are the nominees:

Milton Abrahamson,	Chas. G. Levison,
Harry E. Alderson,	Milton B. Lennon,
René Bine,	Howard Morrow,
Adelaide Brown,	Herbert C. Moffitt,
J. Henry Barbat,	Edward Giles McConnell,
Frank B. Carpenter,	Thos. D. Maher,
George E. Ebright,	Harry R. Oliver,
George H. Evans,	Arthur A. O'Neill,
Jule B. Frankenheimer,	Wm. Ophuls,
W. Scott Franklin,	H. D'Arcy Power,
Henry Walter Gibbons,	Julius Rosenstirn,
Louis Gross,	H. A. L. Ryfkogel,
Herbert Gunn,	Emile Schmoll,
Samuel J. Hunkin,	John C. Spencer,
Philip Mills Jones,	Harry M. Sherman,
Wm. Watt Kerr,	Dudley Tait,
H. B. A. Kugeler,	W. S. Thorne,
C. G. Kenyon,	W. P. Willard,
A. J. Lartigau,	Fred H. Zumwalt.

The following amendment to Article III of the By-Laws was adopted:

ARTICLE III.

Section 3—The San Francisco County Medical Society shall be divided in three sections, i. e.:

1—Medical. 2—Surgical 3—Eye, Ear, Nose and Throat.

Sec. A—The officers of each section shall consist of a chairman, vice-chairman and secretary and such other officers as the section shall deem advisable, who shall be elected by the members of the section at the regular annual meeting in December and shall serve for one year, or until their successors are elected.

Sec. B—Only registered members of a section shall be entitled to vote at the annual election of section officers.

Sec. C—Duties of section officers: The chairman shall preside at all meetings, and shall co-operate with the Secretary and the Executive Committee of the Society in the arrangement of the section program. The vice-chairman shall preside in the absence of the chairman, and perform his duties when called upon. The Secretary shall keep a record of the proceedings of the section, and make a written report to the annual meeting of the Society in December.

Sec. D—Meetings: Each section shall hold one monthly meeting, i. e.:

Medical Section—1st Tuesday of each month.

Surgical Section—3rd Tuesday of each month.

Eye, Ear, Nose and Throat Section—4th Tuesday of each month.

NOTICE.

Several of the case reports and papers are herewith published. It is the intention of the Secretary of the San Francisco County Medical Society to publish in full the transactions of the Society.

SECTION ON MEDICINE OF THE SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Oct. 4, 1910.

Report of a Case.

By H. D'ARCY POWER, M. D., San Francisco.

I beg to report a case of typhoid fever with almost certain thrombosis of the cerebral arteries and hemiplegia. These cases are quite rare and in the literature on the subject I find that Osler so speaks of them. Henshaw has reported something like 28 cases. Nothnagel refers to the rarity of the occurrence and quotes one or two from his own experience. This was a child of 8 years of age; she had always been in good health, was taken with general malaise and loss of strength, and had been sick for a period of eight days when the case was brought to me. The temperature was 104° and the general condition of the tongue was that of a typhoid patient. On the ninth day there was present some enlargement of the spleen but absolutely no other symptoms of any kind. I concluded at the time that it was probably typhoid, so put the child on the usual treatment. Blood count was taken and there was no Widal reaction, the blood was deficient in both whites and reds. The temperature, if not controlled by hydrotherapy, remained at 104°. On the nineteenth day there was a positive Widal reaction. The child was well fed, put upon a diet amounting to 2050 calories a day of cream, milk and milk sugar. Just as we were hoping for a fall of temperature there suddenly appeared a very rapid increase in respiration. I saw the gravity of the impending situation, called in Dr. Cheney, and he agreed with me that pneumonia had set in. On the following day the child developed a right-sided paralysis of the arm, slowly progressing until at the end of the forty-eight hours it was complete over the whole side. With this occurred a remarkable disturbance of the respiration, the rate was between 80 and 100 for three or four days, nearly as rapid as the pulse. Six days later the lung symptoms diminished in severity. We thought the child would pull through, when suddenly, at the end of a favorable day, extremely rapid respiration set in with marked cyanosis and the child died an hour after these symptoms started. The slow onset of the right-sided hemiplegia with the sudden (and probably embolic) ending would indicate that the symptoms could be due to no other cause than thrombosis of the cerebral arteries, and this according to general statistics is a very rare event.

Discussion.—G. W. McCoy, San Francisco: I have seen no case similar to the one shown, but I would like to mention what you all probably know, that in cases of typhoid it is possible to make a positive diagnosis very early, in perhaps 95% of the cases, by making blood cultures. This is much better than waiting for the Widal reaction, which often appears late. The technic is very simple, and when you get a culture of the bacillus from the blood it clinches the diagnosis as nothing else can.

Presentation of a Case of Leprosy.

By LOUIS D. MEAD, M. D., San Francisco.

This patient was admitted to the leper department of the Isolation Hospital on May 9, 1910. He is 28 years of age, a dishwasher by occupation, and was born in Canton, China. He resided there continuously until three years ago, when he emigrated to the United States. There is no family history of leprosy, and, while he has seen lepers in his native country, denies ever having lived in intimate contact with them. There is no venereal history, or that of any serious illness prior to the onset of the present trouble. Some months before leaving China he complained of sharp pains in the legs, which were treated for rheumatism with considerable improvement. These pains returned soon after reaching San Francisco, but not with sufficient severity to prevent his

working; about eighteen months ago large erythematous patches were noticed over the extremities and the back, the pain in the legs became more severe, with marked tenderness to pressure over the soft parts; finally circumscribed beefy red patches developed over the affected areas, with dark, almost black pigmentation over the shins. The condition was then diagnosed as syphilis, but under specific treatment only temporary amelioration of the symptoms was obtained. The patient slowly lost in flesh and strength, was deserted by his countrymen and compelled to live a precarious existence in a basement in Chinatown.

For many weeks prior to his admission he had lost entire control over the lower extremities, the pain having given place to occasional sensations of numbness and tingling, more marked in the legs and less so in the forearms. The physical examination on admission showed: patient in an almost moribund condition, weighing about 70 pounds; he was confused mentally, the mucous membranes were pale and cyanotic, eyebrows thin, no conjunctival involvement. The skin was dry and scaly, black pigmented areas over both shins, over both legs, forearm and back, round or irregular dark areas, from $\frac{1}{4}$ to $\frac{1}{2}$ inch or larger in diameter, the color of which did not entirely disappear on pressure. Skin over fingers, feet and shins was glossy; considerable atrophy of the soft parts, and edema of the hands and feet. Bedsores were present over both hips, there were a number of dirty pustules on the cheeks and nose. Patient was unable to move the legs, patellar reflex absent on both sides. There was a marked hyperaesthesia over the extremities. Both ulnar nerves thickened and palpable at the bend of the elbow. On microscopical examination the bacillus leprae was found in great numbers in smears from the nasal secretion and pus from the face. Dr. Oliver reports the Wasserman negative.

Subsequent course of the disease. He was placed on a fluid diet for the first few weeks and as his strength and appetite increased this was made more generous until now he is and has been for some time past having a full diet. He was given frequent baths and as soon as possible gotten out of doors for the greater part of each day. From the first the improvement has been marked, the mental condition has cleared up, he is cheerful and is gradually regaining his strength. Some power has returned to the legs, but he is as yet unable to stand. At the present time there are areas of partial anesthesia over both legs, below the knees, some hyperesthesia over the feet and an interesting condition of enlargement and leprous infiltration over the dorsum of both feet, a phenomenon quite common in some lepers and which does not pit on pressure unless the legs have been in the dependant position for some time.

As to the prognosis, there is every reason to believe that under proper hygienic surroundings the condition should continue to improve and will in all probability then remain quiescent for a period of months or years, when other symptoms will begin to develop such as complete anesthesia and atrophy of the hands with contractures, possibly ocular involvement and blindness, laryngeal complications and finally death from aspiration pneumonia. An interesting point in connection with this case is that absolutely nothing was attempted in the matter of specific medication. The improvement is most apparent, he has gained 50 lbs. in weight and would not be recognized as the same man who came under our care five months ago. Had any pet therapeutic scheme been indulged in, we would have been prone to feel that the improvement was due to its benign action rather than to the good hygiene and the natural course of the disease.

(Demonstration of patient and stained slide of bacillus leprae taken from nasal secretion.)

Discussion.—Harry E. Alderson, San Francisco: The condition of this patient speaks for itself; it is a clear-cut case of leprosy and I think a very interesting one. In connection with the treatment of this disease I will mention that this summer I saw some interesting culture work in Honolulu by Brinkerhoff, Currie and Holman. These gentlemen have done an immense amount of work and have been successful in growing the lepra bacillus in pure culture. They now have it in the tenth generation. The next step will be the production of a bacillary emulsion for therapeutic purposes. They found that cases which had been treated with chaulmoogra oil for a while were not favorable ones from which to get material for inoculating tubes. I would like to ask Dr. Mead what treatment his patient has had.

G. W. McCoy, San Francisco: In regard to the subject of recent advances of our knowledge of leprosy, I am not sure that we are justified in speaking of actual progress. I had occasion a month or more ago to look up the literature of the subject, and I found that about a year and a half ago Clegg succeeded in cultivating an acid-fast bacillus from the spleen of the lepers who had died. He got the growth of the organism believed to be the leprosy bacillus by starting his cultures on a medium on which ameba were growing in symbiosis with the cholera vibrio. The mixed culture was exposed to a temperature of 55° to 60° C. and in this way the amebae and the cholera vibrios were killed off and a pure culture of the leprosy bacillus left. According to Clegg's work, it is surprisingly easy to cultivate the leprosy bacillus after it gets started. This work of Clegg's has been confirmed by scientists at the Leprosy Investigation Station at Honolulu. A man in New Orleans, whose name has slipped my mind, has gone over the same ground and has secured similar results. In reading the various reports one is left in some doubt as to whether all of these investigators have been dealing with the same organism. An interesting point is that Clegg has claimed that he produced leprosy-like lesions in guinea pigs. This is a remarkable thing, because practically all laboratory animals have resisted inoculation with leprosy. A Japanese worker claims to have produced the disease in dancing mice. He has carried it through several generations of these mice. His work indicates that it is very easy to produce the disease in these little rodents. If the test of time shows all of this work to have been properly controlled, we are no doubt on the eve of a very material advance in the treatment of leprosy.

Dudley Tait, San Francisco: I have followed the work done by Duval of Tulane University, who not only repeated Clegg's experiments, but went very much further. Clegg succeeded in growing the lepra bacillus in symbiosis with ameba, colon or typhoid. Duval obtained pure cultures of Hansen's bacillus on the banana, smeared with a 1% solution of cysteine in agar. Duval's article in the current issue of the Journal of Experimental Medicine contains some beautiful illustrations of experimental leprosy lesions in dancing Japanese mice. I would like to hear from Dr. Mead what percentage of his leprosy colony gave a positive Wasserman reaction. This point is still unsettled among syphilographers, it being apparently admitted that the further one gets away from the tuberculous type, the more frequently is the Wasserman found to be positive.

W. C. Alvarez, San Francisco: The diagnosis of these cases is sometimes very difficult when the only lesion to be found is a small pigmented area, and there are no tubercles. If a small piece of the affected skin be lifted up, snipped off, and then ground up in a small mortar with a drop of salt solution, the bacilli can generally be found in the sediment. This is the method long used in Hawaii for confirming the diagnosis in cases to be sent to Molokai.

Louis D. Mead, San Francisco: Answering Dr. Tait's question in regard to the Wasserman reaction:

in two other cases we found a positive reaction in one and a negative in the other; thus far only three have been made. This patient has gained about 50 pounds in three months, has gained power in his legs and is on the mend. This is a pure type of the anesthetic form of leprosy, but most of these cases are the mixed type, i. e., the anesthetic form and the tubercular form.

October 11, 1910.

Presentation of a Case.

By WM. C. VOORSANGER, M. D., San Francisco.

I am presenting this case before you to-night because it is one of rather unusual interest. This patient has a very advanced tuberculosis of both lungs, and in connection with this a condition of the tongue that can undoubtedly be diagnosed as tuberculous ulcers. This condition is a very rare one outside of large centers where there are such great numbers of cases seen. The patient's family history is negative. Three years ago he was taken ill, had malarial fever which kept him in bed for three weeks. At that time he began to cough and had a bad cold on his chest and since then he has gone down hill slowly. About a year and one-half ago he noticed a small growth on the tongue, which gradually spread. Now there are two large ulcers, one on the left side of the tongue with sharp edges, infiltrated; the ulcer on the other side is a smaller one, and to-night he has called my attention to another one at the back of the tongue, which is just making its appearance. To my mind this is typically tuberculous; there are only two other things which it possibly could be and they are syphilis and epithelioma or carcinoma. We can exclude epithelioma, as it did not start as epithelioma usually starts; there are but a few small glands in the deep cervical region in back, the tongue is not fixed and has not developed enough in the past year and a half for carcinoma. Lues can be ruled out; it did not start as a syphilitic ulcer would. The man gives the history of having taken potassium iodid, in Texas, and it made absolutely no impression upon this condition. Sections have been made and tubercle bacilli have been found in large numbers in the sputum. I believe the case to be unquestionably tuberculosis of the tongue.

The Menace of Tropical Diseases to California.

By HERBERT GUNN, M. D., San Francisco.

Read at the meeting of Oct. 4th, 1910.

The importance of tropical medicine is rapidly becoming appreciated throughout the United States and where, only a few years ago, only an occasional worker could be found interested in the subject, now there are many. The subject appears in the curricula of many of the medical colleges, some of which have established departments of tropical medicine. The result of this growing interest is apparent in the increased number of tropical ailments being recognized in all parts of the country.

No state in the Union is more vitally affected by the group of diseases generally known as tropical diseases than California. Our intimate commercial intercourse with many tropical regions furnishes an abundance of diseases peculiar to those countries. Upon the completion of the Panama Canal our increased traffic on the Pacific will give rise to new and serious problems in the prevention of the dissemination of new diseases in the country. The climatic conditions here in California are in certain parts of the state quite favorable to the development of tropical diseases, so that we have no reason for believing that if introduced they will not flourish.

Several diseases have already gained a foothold: malaria, bubonic plague, amebic dysentery and probably hookworm disease.

Sources of Infection.

California has undoubtedly been receiving cases

of various diseases for many years from China, Japan and Central and South America, but since the acquisition of our tropical possessions, the supply has been greatly augmented by returned soldiers and civilians. One of the greatest known sources of infection for certain diseases during the past seven or eight years has been the Hawaiian Islands. Although these islands have usually been considered quite free from most tropical diseases except leprosy, they have imported enough during the last decade to make them a serious focus for the spread of certain diseases. Their mistake was in the importation of thousands of Porto Ricans to work the sugar plantations.

Five years ago the writer demonstrated that over fifty per cent of these people were affected with hookworm disease, which they had contracted in Porto Rico. These conclusions were reached after the examination of over 100 Porto Ricans who had taken up residence in California after leaving the Hawaiian Islands.

Within the past year several cases of this disease came under observation which were undoubtedly contracted in the Hawaiian Islands. While considerable sums have been expended by the Federal Government to stamp out this disease in Porto Rico, it has been gaining a foothold in Hawaii; by the time millions of dollars have been expended in the South to eradicate hookworm disease, it will probably be found to have gained a strong foothold in California. Scattered throughout California to-day there are hundreds of cases and more are constantly arriving.

In San Francisco there is quite a colony of people affected with hookworm disease. In the cities, on account of the sewerage, there is practically no danger of the disease being spread, but in rural districts the danger is great. The soil and water supplies being contaminated, man is infected either by the entrance of the parasite through the skin or by ingestion of infected material. Within the past year several cases of this disease have been reported as originating in this state. The most important of these, occurring in a mine in Amador County, was described by Dr. F. P. Sprague. Conditions in mines are often ideal for the propagation of the hookworm, and once established it is very difficult to eradicate. Vast sums were expended in the Westphalian mines before it could be controlled, but thus far all efforts to absolutely stamp out the infection have not availed. The number of cases has been greatly reduced and the severity of these lessened by early treatment. The magnitude of the task may be appreciated when it is stated that at one time there were 25,000 cases in these mines.

It can readily be appreciated that the infection of the Hawaiian Islands and California with this disease is a matter of considerable importance; yet, so far as is known, absolutely nothing has been done to prevent the disease gaining a foothold in this state. Many of the Porto Ricans harbor, in addition, the filaria sanguinis hominis, a small blood worm which is transmitted by the mosquito. About a dozen cases of this infection have been observed by the writer in San Francisco, also several cases of elephantiasis, a disease believed by many to result from filarial infection. It was estimated that about ten per cent of the Porto Ricans are infected with this parasite, so that at least a couple of hundred infected individuals are scattered throughout the state. Filarial disease is found in most tropical countries so that, if sought, it doubtless could be demonstrated among other races here.

Dr. Wellman of Oakland has demonstrated that the mosquitoes in that locality will not carry the parasite, but, of course, we do not know what the result would be in other parts of the state.

A rarer infection, also found in the Porto Ricans, is the schistosomum hematobium, or schistosomum mansoni (Bilharzia disease), a worm inhabiting the veins and producing dysenteric symptoms. Three

cases came under the writer's observation in San Francisco which are, as far as is known, the only ones reported in the United States.

Another species of this parasite (very prevalent in Egypt) affecting the bladder, has been observed here on several occasions. A third species called *S. Cattoi* or *S. Japonicum* could doubtless be found if sought among our Japanese or Chinese colonies, as it is quite prevalent in parts of Japan and China. The life history and mode of development of these parasites is not understood, so we do not know how much danger there is of the disease being disseminated. Amebic dysentery, one of the greatest scourges of the tropics, has already gained a foothold in this state and cases developing here are occasionally encountered. It is impossible to trace the origin of this infection in California, but unquestionably the disease has been greatly disseminated by infected persons returning from the Philippines and taking up residence in the rural districts. In several parts of this state, amebae have been occasionally demonstrated in water supplies and in washings from vegetables such as lettuce, but further work is necessary before it can be definitely stated that these were disease bearing. Bubonic plague, which has taxed our efforts so greatly for the past few years, has gained a firm foothold in California in the ground squirrel and isolated cases may be expected to develop at any time. However, with the present efficient Federal inspection it is not probable that any serious outbreak will occur. The eradication of plague in San Francisco affords one of the most striking examples of the brilliant results of modern sanitation. Malaria, which is so prevalent in certain parts of this state, should for several reasons be looked upon from a tropical standpoint. Filariasis, which we have at hand, and yellow fever, which we may have at hand with the advent of the Panama Canal, are, like malaria, mosquito-borne diseases and may, under favorable conditions, thrive here. In certain localities in the tropics malaria of the estivoautumnal variety at times develops most malignant characteristics. The parasite found in these pernicious cases appears the same as the ordinary estivoautumnal parasite found in the milder fevers, but as the pernicious cases are usually confined to certain localities and do not occur in many places where the estivoautumnal parasite is prevalent, it would seem possible that there may be some difference in the parasite. If this were the case it might be possible for the parasite of the pernicious variety to become established in our malarial districts. The writer has seen three cases of pernicious malaria in San Francisco, one of which died. One was from New Orleans and two from the Philippines. Of three human cases of lung fluke disease observed in the United States, two occurred in California—one found by Dr. Cooper and one by Dr. Wellman.

This disease is quite prevalent in certain parts of China and Japan, and doubtless many cases here have been overlooked, it usually being mistaken for tuberculosis. The life history of the parasite is not understood. Cases of gangosa described by Dr. Geiger of the United States Navy, leprosy, beriberi, liver fluke disease, sprue and diarrheas produced by the strongyloides intestinalis and balantidium coli, complete a list of tropical diseases observed in California, which I am quite sure could not be duplicated in any other state in the Union.

None of the diseases considered in this paper except leprosy, plague and yellow fever come under the regulations of the quarantine service, so there is nothing to prevent infected persons going and coming where they please. Of course, in some of the diseases it would be very difficult to know what to do with them if they could be regulated, but in others the measures that should be taken are perfectly understood. The eradication of yellow fever in Havana and in the canal zone shows what attention to the mosquito may accomplish.

Malaria and filariasis may be controlled in the same way. Attention to the rat cleared San Francisco of the plague. Other diseases such as amebic dysentery and hookworm disease are controlled by preventing contamination of the soil and curing the cases. In hookworm disease a cure can be accomplished in a few days, i. e., the parasite can be destroyed; so by treating all cases and guarding against reinfection the disease would theoretically soon be stamped out of a community. However, the long life of the embryo, over a year in the laboratory, makes its eradication from the soil a very difficult problem, as has been demonstrated, especially in the mines of Westphalia and Cornwall.

In this day of preventive medicine, it would seem that measures should be taken to control, as far as possible, the influx of persons infected with these diseases. Up to the present time nothing has been done. A Chinese, a Japanese, a Hindu or a Porto Rican has been permitted to introduce the diseases peculiar to his country without a question.

Discussion.—P. A. Surgeon M. W. Glover, San Francisco: There seems to be some little confusion as to the exact duties of the different marine hospital officers here, and I will make that clear first. In the first place, I am not the quarantine officer. That station is also on Angel Island, it is true, but I am attached to the Immigration Service, for the purpose of examining aliens coming into the country, to determine whether they have any contagious disease, are insane, idiots or imbeciles or unable to earn a living from any physical cause. It is a very difficult matter to carry out this inspection so thoroughly as to exclude all of the tropical diseases that Dr. Gunn has been speaking of. There are some of them that are classed as dangerous contagious diseases or loathsome contagious diseases that are sufficient to deport the alien outright, except in certain cases where the alien has the right to land irrespective of his physical condition, such as a native or the sons of a native. A Chinaman who is a native goes to China and marries; maybe ten or twelve years later his son will come over and must necessarily be landed on proper identification. Those cases we cannot do anything with, they are landed immediately; that question has been thrashed out in the courts and there is nothing to do but to land them. The poor benighted Hindu has been pretty well kept out heretofore; regardless of the hookworm, every opportunity has been taken to keep him out. Before I began to examine the stools of these people they were certified for debility, poor physique or anemia and they were sent back. Now I have some good scientific reason for certifying them and my conscience is a little clearer. Many cases of hookworm disease must have entered the country, because since I have been looking for the hookworm ova I find it in cases that present no clinical evidence of having the disease. I have found some cases of amebic dysentery and several cases of malaria from Mexico and Panama, going to the Orient, but no effort is usually made to stop this class of case going out of the United States. I was much interested in the paper just read by Dr. Gunn, and also in the case of leprosy exhibited by Dr. Mead. Hereafter I will keep my eyes open for leprosy, though such cases are supposed to be barred by the quarantine officers.

Herbert Gunn, San Francisco: Hookworm is a disease that can be very readily controlled because it can be cured in a few treatments. It seems to me that it is an awful thing to allow a state to become infected with a disease which is so hard to eradicate from the soil when it once gains a foothold. This state in the last five years has been overrun with cases which were allowed to scatter throughout the farming regions and thus have probably infected the country.

A Case of Continued Fever.

By W. C. ALVAREZ, M. D., San Francisco.

Read at the meeting of Oct. 4th, 1910.

Nothing will teach a man so much, or keep him so humble, as the frequent performance of autopsies. He will become all the humbler if the mistakes and oversights occur in his exhibition cases like the one I am about to describe. Such accidents must have happened even to the Father of Medicine, judging from the first of his famous aphorisms, "Experience is fallacious and judgment difficult."

T. H., aged 53, a laborer, came to Cooper College Clinic September 6, 1909, complaining of a dull, dragging pain in the right lumbar region, so severe as to keep him from any rest or sleep.

His past history was negative except for a little malaria. He never had anything like rheumatism, and never had any joint pains in this or any other illness. He did not remember ever having any symptoms referable to the heart, and that organ seemingly had always been competent. There was no history of any lung trouble.

He had been feeling badly and suffering some pain since the first of the year, and had to quit work two months previously. A significant point was that the pain was relieved by sitting erect. No note was made as to any tenderness of the spine at the time, though it must have been looked for. There was marked rigidity of the lumbar vertebrae. He perspired freely on slight exertion. The heart sounds are described as forcible and clear. The pain later moved around into the back. Under pot. iod., sod. sal., colchicum and aspirin he seemed to improve, and was discharged November 29 as better.

A month later he was admitted to the polyclinic service at the C. and C. Hospital, much emaciated, and complaining of the same severe pain, now in the right hypochondrium, sometimes severest over the gall-bladder and sometimes over the appendix. This led to his transference to the surgical service for operation. They could feel no mass in the abdomen, and, as there was very little resistance, they very discreetly sent him back to the medical side for a diagnosis.

There the following notes were taken. The pain has sometimes shifted over to the left side for a while. It has never radiated down the ureter. There has been no precordial pain or symptoms referable to the heart. He has lost sixty pounds in weight in the last year. There is no mention of pulse or temperature in the Cooper Clinic record, and the patient states that he began to notice fever shortly before entering the hospital. During the five months of his stay there, he ran a septic temperature from 103° to 99° in the mornings, without intermissions.

The face is red with marked cyanosis of the nose and ears. The hands are also very cyanotic. There is slight dyspnea and respiration is mainly thoracic. No definite pathologic changes in the lungs. The heart is slightly enlarged to the left, a systolic thrill can be felt and there is a double mitral murmur. In the abdomen, a distended cecum can be seen, which disappears under palpation. There is slight rigidity of the muscles on the right side, and a little tenderness over the appendix. There is no tenderness over the gall bladder where the pain is now localized. The spleen and liver are not enlarged, and there is no mass to be felt anywhere. There is absolutely no tenderness of the spine on vigorous percussion and no disturbance of sensation can be demonstrated. The reflexes are slightly exaggerated in the lower extremity.

Counts made in January showed a leukocytosis of 11,000 to 14,000.

Dr. Schmoll made a diagnosis of chronic ulcerative endocarditis with an embolus somewhere in the corresponding spinal segment to account for the pain. This pain, by the way, disappeared suddenly nearly

two months before he died, and did not return. The occasional pain in the left side suggested infarction of the spleen. A blood culture was made February 3, and showed staphylococcus aureus, which was thought to be a contamination. A second blood culture, after three days in the incubator, showed a delicate growth of a streptodiplococcus which appeared to be identical with the diplococcus rheumaticus of Ponyton and Paine. After several transplantations, the growth from three agar slants was injected into two rabbits, but did not produce any symptoms whatever in either animal.

The patient was now given large two-hourly doses of sod. sal., with sod. bicarb., and he had a day entirely free from fever, the first in months. His general condition seemed to improve very markedly, and he got up out of bed and walked around a little. There was no paralysis and no disturbance of gait. The murmur and thrill also disappeared.

He was now the exhibition case of the ward, many men went over him, and the University of California held a clinic on him. All agreed that a nice diagnosis had been made and well proven. But the improvement was only temporary and he died on April 13, after a short terminal pneumonia. Fortunately we were able to secure an autopsy through the courtesy of the anatomical department of Cooper Medical College. Unfortunately we had taken good care to apprise our colleagues at Cooper of their diagnostic shortcomings in this case, and next day they were out looking for us. The pathologist, with his usual ruthlessness, had spoiled the whole thing. This is what he found.

The heart showed only an old sclerotic process at the mitral orifice and no recent endocarditis. Nothing was found in the vascular system to account for the bacteremia.

Both lungs were firmly adherent along the bodies of the ninth, tenth and eleventh dorsal vertebrae. This was found to be due to a tubercular caries which began in the ninth dorsal vertebra and extended along the intervertebral disc through both sides and backwards into the spinal canal where a large mass of granulation tissue was beginning to press on the cord. Abscesses were formed on each side, the larger on the right, which finally spread into the lung and caused a caseous pneumonia. The intercostal artery and nerve on the right side were exposed in the wall of the abscess cavity. There were a few tubercular ulcers in the intestines, a few abscesses in the prostate and several nodules in the kidneys, liver and spleen.

The original focus was probably an old fibrotic process in the left lung.

The first thing to do with an obscure case like this is to put the man to bed in a good hospital where he can be observed for a few days at rest. The man was seriously ill when he came to Cooper, and it was a mistake to try to treat him through the clinic. The temperature must be taken every few hours so as to detect any afternoon rise. The pulse is also very important, as it sometimes has a typical curve when the temperature does not vary much. The persistence of the rapid pulse with rest in bed is a valuable sign of toxemia—often tubercular. It must be remembered that the rise in temperature does not have to start from 98.6°, the accepted normal. Many of us have a temperature of only 96°-97° when at rest in bed, so that the earliest sign of a beginning tuberculosis may be a regular rise to 98.6° or 99° at most.

The case under consideration is an excellent example of how sometimes things seem to conspire to lead one astray. In the absence of the heart murmur and the positive blood-culture, we might have continued studying him in other ways until the tubercular process was discovered. It might be mentioned here that it is proverbially difficult to interpret heart-murmurs in the presence of fever and anemia. Towards the close of this man's illness,

tubercle bacilli might have been found in the feces as pointed out by Rosenberger. An examination of the prostate and testicles should never be omitted as they are often the seat of tubercular foci. In this case, the prostate was known to be large. Strange to say he never had any cough or sputum in spite of all the pleural irritation. It is also remarkable that there was no tenderness of the spine and no interference with the function of the cord.

Let us now briefly consider the subject of chronic malignant endocarditis.

Osler has frequently called attention to the fact that there is a form of endocarditis which can run on for months, with a little fever as its only symptom. The more acute cases generally do not last longer than three months and the course is marked by chills and sweats which greatly resemble malaria. The diagnosis is fairly easy, however, as the heart symptoms are predominant, and there is a history of recent broken compensation perhaps after rheumatism or pneumonia.

The very chronic cases often show for several months little more than the persistent fever and they sometimes keep at work with very little toxemia, fair appetite and only slight loss in weight. The disease is really a septicemia, with occasionally symptoms of a mild pyemia, and it is not surprising that it is often taken for ambulant typhoid.

The presence of the old sclerotic valves, and especially congenital lesions is very important as a predisposing factor.

The fever is remittent, seldom rises over 102°-103°, and is very regular except for occasional periods of apyrexia which may occur, especially towards the end of the disease and give rise to the deceptive hope of recovery. There are no subjective heart symptoms and the murmurs show remarkably little change even with marked alterations in the condition of the valves. There is generally a little enlargement and dilatation of the heart. Signs of embolism are of greatest importance when found. There may be sudden swelling of the spleen with pain and perisplenitis; sudden hematuria; retinal hemorrhages; hemiplegia; crops of purpura, and very diagnostic small painful erythematous nodes which appear suddenly, especially on the hands.

Blood-cultures are very valuable in these cases as in a large proportion, the bacterium can be isolated. Five to ten cc. of blood can easily be taken from the veins of the arm without causing much discomfort. The skin over the vein may be sterilized and anesthetized with a tiny drop of pure phenol and even nervous women will not complain at all.

The commonest organism found is a streptococcus of low virulence as shown by animal experiments and the fact that the emboli never suppurate as they do in pyemia. There is rarely any leukocytosis though the number of circulating bacteria may be enormous, and the toxemia is generally slight.

Horder has studied the streptococci isolated from thirty-one cases and concludes that most of them are identical with the non-virulent strains found normally in the saliva and feces. His low virulence and autogenous origin may also account for the great chronicity of these cases and the failure of the body to cope with the infection. The streptococcus which was isolated in our case was undoubtedly one of these avirulent strains which had entered the blood as a terminal infection at least three months before the end.

Endocarditis has been produced in rabbits with these streptococci.

Other conditions to be thought of in a case like this are typhoid with relapses, syphilis, Hodgkins disease, malignancy and sepsis, in which the focus may be in the pleural cavities, the liver, the biliary system, the renal pelvis, the appendix, the Fallopian tube, the urinary bladder, the middle ear, the nasal sinuses. The leukocytes will be normal in number if the septic focus is well walled off, but a count

should always be made immediately after a chill, as a rise at that time is very significant.

The study of these cases of protracted fever is one of the most interesting in the field of medicine, and with all our refinements of diagnosis, the autopsy too often has a surprise in store for us if we have been able to form any kind of a diagnosis at all.

In closing, I wish to thank Dr. Schmoll for permission to report this case, and Drs. Dickson and Blaisdell for their great courtesy in securing the autopsy.

Discussion.—Herbert Gunn, San Francisco: Speaking of prolonged temperatures, Dr. Alvarez mentioned Hodgkins' disease. I saw a case in the City and County Hospital five or six years ago, and followed it for about two years; there was remittent temperature running about two weeks, followed by an intermission of two or three weeks with the temperature normal or subnormal. This lasted for several years. The diagnosis was made of Hodgkins' disease of the variety described by Ebstein. Finally the man came to autopsy and the diagnosis was verified.

QUANTITATIVE FOOD PRESCRIBING.

By H. D'ARCY POWER, M. D., San Francisco.

Read at the meeting of Oct. 11th, 1910.

It would be interesting to ascertain the percentage of physicians who in the United States, or for that matter in any country, habitually prescribe a quantitative dietary for their patients' use. So far as I have been able to judge one per cent. would be in excess of the truth, yet it is universally recognized that every deviation from the physiological norm is fraught with loss in matter or energy, that too often is irreparable. Why then do we not prescribe foods with as much accuracy as we apply to drugs? Why do we condemn the shotgun prescription and condone the shotgun diet? The true answer is that quantitative directions are not given because many do not know what to order, and others are unable to give directions that are intelligible to their patients. The work of the past twenty years has brought some order out of chaos. We do know the food requirements of the body in health and disease, we do know the ability of the various food stuffs to supply these demands. But this knowledge has not been put in a form capable of utilization by the general practitioner in his daily work. This communication is a small attempt in the latter direction. I hope to show that without lengthy and perplexing tables we can prescribe qualitatively and quantitatively with sufficient accuracy to meet all clinical requirements and in a manner understandable by our patients.

In order that I may justify my method, it is necessary to draw your attention to some of the well attested principles that underlie all dietetics. Let us first note that there is not only an absolute obligation to eat, but also to eat a certain quantity. We must oxidize enough matter each day to preserve our normal body heat,—if we fail we die. We must take in that matter as food, or take it from our body tissues. The amount of heat we lose is determined by the extent of our skin area, and for men living under normal conditions this is the one and sufficing factor in fixing our daily ration. A dead body left in bed cools at a definite rate, a living body radiates heat under the same conditions at the same rate, namely, about 1000 cal. per sq. meter or 30 cal. per kilo. If no food is taken the amount of heat is obtained by the oxidation of the tissues (13% protein, 87% fat). From this law there is no escape, but how often is it overlooked in sickness. A sick child refusing its food, loses weight twice as fast as an adult under like circumstances. How many of us make an estimate of its caloric requirements and see that they are supplied? A short fat man and a tall thin man of like weight come down

with typhoid fever. Do we realize that the dietary of the two should be quantitatively different and that if we fail to note this a heavy penalty will be exacted? Speaking of typhoid, I feel that if natural laws have any validity, then most assuredly we have been responsible in the past, and are still frequently responsible for much of its mortality. For years we fed our typhoid patients on an empirical diet, of milk 40 oz., beef tea 40 oz., less than one thousand calories, when the body was losing at least 2000. Thus Dr. Thomas McCrae of Johns Hopkins in his recent article on the Treatment of Typhoid, prescribes as a diet to be used throughout the attack 24 to 36 oz. milk and the whites of two eggs in water; if any change is made it should be in the nature of a reduction. The learned writer makes no reference as to whether the patient is fat or lean, short or tall, all alike are condemned to a daily loss of substance equal to 2000 calories, or more. That an obese individual might with benefit borrow 50 lbs. of his weight to supplement his diet is conceivable, but that a normal or thin person can so deplete his tissues without harm is absurd. No wonder we meet with degenerative lesions in the latter periods of the disease. This law of minimum requirement is all important in health as well as disease. Thus we meet with healthy people under and over weight. A careful enquiry into their food habits (I make them bring me a detailed account of everything they have eaten and drank for seven days) will show that many of the under-nourished are living so close to the physiological minimum that occasional dips below are not made good. As to the obese, the common fallacy that they cannot be relieved by diet is foolishness. Chittenden has shown that an obese man can be fed on a diet equal to two-thirds of his daily loss without any harm. When his proper weight is attained it is merely a matter of seeing that his daily diet shall not exceed his minimum physiological requirement. In connection with this matter of obesity, I would draw your attention to another law of practical application. When the daily intake of food exceeds the body needs, its constituent parts are differently dealt with. All the proteid is consumed, most of the carbohydrate suffers oxidation, but if the food contain fat, this as the least easily oxidized is most prone to be stored. If therefore your obese individual will not restrain his appetite, he will make the least gain on a proteid diet.

It will now be in order to consider what is a physiological diet, by which term I mean the minimum daily intake of food that shall provide the necessary energy without loss of weight. Anything more than this must of necessity be a detriment—for all burning of unused residues implies labor and cell exhaustion, and all storing of surpluses, so much useless additional weight with corresponding tax on the organism. Let it first be noted that the figures obtained by observing the loss of a starving body at rest and protected from cold, are suggestive but not conclusive of our needs. The loss of body weight equal to the 1500 calories p.d. cannot be replaced by a food allowance of equal caloric value. Losses occur in the intermolecular combinations, which demand a larger intake. The question is, how much? There are two methods available to the investigator. We can observe the general experience of men under varying conditions; and if widely separated races and classes give an approximately uniform response, accept this as nature's answer. Secondly, we can ascertain by careful experimentation under conditions that admit of exact measurement, the minimum food supply compatible with active work and perfect health. Both methods have their advocates, and if the results agreed there would be no more to be said on the subject. For a long time such an agreement was supposed to exist, and the laboratory findings were closely in accord with the average human experience. Thus the dietaries of farmers in the New England States, Mexico, Italy and Finland run about 3500 cal. p.d. Even the quite

different form of food consumed by the frugal Japanese when considered in reference to their stature is not different in value. The municipal food statistics show that town dwellers in the aggregate consume not so very much less. The average of London, Paris and Munich, a total population of 10,000,000, being 2800 cal. p.d. With these findings the experimental deductions of the earlier investigators were in general accord. They vary from Rubner 2800 cal. to Atwater's 3400 cal. p.d. These conclusions seemed to be final until Professor Chittenden commenced his remarkable experiments. He cut down the proteid food to half the supposed normal intake of 118 grams and reduced the total food to a caloric value of 28 per kilo—1600 c. p.d., and yet after a short period of adjustment he lost neither weight nor strength. What he found true for himself he demonstrated by extensive experiments on men in all walks of life, age and occupation, and so far, though much criticism has been expended on his conclusions no refutation has been made. Most of the criticism is based on the assumption that natural cravings must be right. The idea is excellently expressed in the words of Sir William Roberts when he wrote that: "The generalized food customs of mankind are not to be viewed as random practices adopted to please the palate or gratify an idle or vicious appetite. These customs must be regarded as the outcome of profound instincts which correspond to certain wants of the human economy. They are the fruit of colossal experience accumulated by countless millions of men through successive generations. They have the same weight and significance as other kindred facts of natural history, and are fitted to yield to observation and study lessons of the highest scientific and practical value."

I have no desire to show disrespect for nature's works or promptings, but they must not be made into idols. There are those who would declare the removal of the vermiform appendix an act of sacrilege—nature having intended it for use. That the use lapsed some millions of years ago in our prehuman ancestors is overlooked; but what is true of vestigial organs is no less true of primitive appetites that have survived their time. Primitive, and in some regions savage man, suffered enforced fasts; to make good his losses nature evolved an appetite in excess of the normal daily requirement, and that abnormal appetite we inherit—just as we inherit the obsolete appendix. We are safer without the appendix and we would be safer on a physiological than on an excessive diet. However, so far as our purpose is concerned the difference between the authorities is not large enough to be of serious moment. We have seen that the heat expenditure which determines our alimentary needs is dependent upon skin area. According to Voit (*Zeitschrift für Biologie*, 1901), we need 1040 calories for each square meter. The most accurate estimate of the body's needs would be obtained by an estimation of its areas. This can be done by applying the formula here given to the known weight of the individual.

$12.3 \sqrt{\text{body weight}}^2$ —area in meters.

I append a table of body weights and skin areas so calculated. In daily practice the method is cumbersome and unnecessary. Another, and popular method, is to calculate the required calories on the basis of the weight—the average of accepted formulas being 32 calories to the kilo—(16 calories to the pound). This is simple but if the patient is far from the normal in weight, he will receive either too much or too little food, moreover, small individuals and children have relatively larger areas than the tall and stout, and need a larger number of calories per kilo. To correct these discrepancies various correctives are employed. Thus it is advised that the normal weight for the patient's height be used instead of the actual weight, special correction introduced for the upper and lower limits. All this is easy in laboratory records, but too cumbersome for the average practitioner in his daily work. I have devised a simple rule

based on a knowledge of the height alone, that calls for neither tables or calculations, and meets all the requirements of clinical practice. It is this: Allow 2000 calories for 5 feet of height and add 100 calories for each inch in excess. Comparison of the results with Rubner's tables based on skin area (*Handbuch der Ernährungstherapie* 1903) will show a close approximation to the theoretical demands.

This enables us to simply ascertain our patient's height, and immediately know how many calories he needs. If he be bedridden 25% are deducted, if at severe labor 25% are added. This is the first simplification I desire to offer. We next encounter the much more troublesome question as to how the necessary calories are to be supplied. Modern books on dietetics and therapeutics supply us with tables, mostly those of Atwater, whence we can learn how much fat, proteid, etc., is present in a kilo of raw sirloin steak or a like quantity of blackberries, and if we have abundant time and some knowledge of chemistry and cookery we can calculate out the food for say one day on the required basis of calories; but how to instruct a patient to provide himself with a reasonably varied diet, day in and day out, uniform in quantity, lieth not in these tables, and the art is practically non-existent in the mass of the profession of this hour. Nevertheless, attempts at a solution have been sought. Dr. Arnold of Lynn, Mass., some time back devised a set of tables giving much information concerning the values of cooked foods with provision for ordering daily quantities. The method is applicable to hospital practice, but you can judge for yourselves how far they solve the problem of enabling John Doe's wife to cook John's daily ration of 3000 calories. It occurred to me in my first attempts at food prescribing, that we must give our orders in terms the public understand. Custom has largely standardized our table habits, slices of bread are fairly equal size. Biscuits are made to a common standard. Though eggs vary individually they have a common weight in the aggregate. The mass of people know what a pat of butter is, and sugar is cut in fairly uniform cubes. A full helping and a small helping of meat correspond with reasonable accuracy to four and two ounces. If we can ascertain the weight and the caloric value of the average food portion served in restaurants and families we can order our dietary in terms of such portions, and attain a close approximation in the aggregate to our theoretical requirements. To this end I collected so far as I could the caloric value of our common foods when cooked, and then ascertained by inquiry at hospitals, restaurants, and by personal weighings in the home, the weight (and thus the caloric values) of the average portion of the common foods as served at the table. Herewith I give the weights and values of such food portions:

Cooked Foods.	Caloric Value.	
	Per oz.	Per average meal portion.
Olive oil	200	$\frac{1}{2}$ oz. 100
Butter	200	$\frac{3}{4}$ oz. 150
Bacon }		
Ham }	150	1 oz. 150
Sugar	120	1 oz. 120
Crackers	110	2 oz. 220
Cake	110	2 oz. 220
Cheese	110	1 oz. 120
Meats	90	4 oz. 360
Toast	90	2 oz. 180
Dates or Figs.	90	1 oz. 90
Bread	80	2 oz. 160
Eggs	80	2 oz. 160
Stewed dried fruit.	80	2 oz. 160
Sardines	80	2 oz. 160
Pies and puddings.	50	4 oz. 200
Poultry and game.	50	4 oz. 200
Cream	50	2 oz. 100
Potatoes	30	1 large 120
Beans	30	2 oz. 60
Rice	30	4 oz. 120
Green peas	30	4 oz. 120
Hominy, macaroni, noodles ..	30	4 oz. 120
White fish and shell fish. .	25	4 oz. 100
Milk	20	10 oz. 200

Note the average oz. value is 80 c.

Note the average portion value is 160 c.

Plain soups, green vegetables and fresh fruits have flavoring and chemical properties but so little nutritive value that their presence in a dietary need not be considered.

It will be noted that there is a close approximation in the values of the foods in common use. While the value per ounce varies all the way from 25 calories for white fish to 200 for butter, the actual quantities used approximates all to a common standard of 160 calories for the amount usually partaken at one meal. This enables us to tabulate the foods in actual use with their caloric value as served at the table. The matter is further simplified by the fact that a number of substances, such as raw fruit, green vegetables, and plain soups have practically no food value and their presence in a dietary can be neglected. Patients are told to eat such quantity as they desire, but to carefully regard the butter, cream or sugar used in their preparation. With a short list of some twenty-four articles it is a simple matter to order a dietary to suit any case. We ascertain the patient's height, put down 2000 for five feet and add as many hundred calories as there are inches in excess. This is the daily caloric requirement for moderate work. We divide the number by 160 and the product is the number of meal portions to be taken each day. These are distributed throughout the twenty-four hours according to the desires of the patient or the will of the physician. Unless there is reason for a particular diet it is not necessary to specify what the food portions shall be, for while some are above 160 calories and others below, the average will fall out true, unless the patient has marked idiosyncrasies in eating. So simple is the card of directions that I employ that the patient of ordinary intelligence is quite able to correct such errors.

Finally I would draw your attention to a still simpler method of finding the daily number of meal portions for adults of normal weight. Namely, divide the weight by ten and the answer is the number of meal portions.

In a field in which there are no absolutes I trust that this attempt at simplification may lead to relative accuracy and the common practice of quantitative food prescribing.

Discussion.—Caroline Rosenberg, San Francisco: I should like to ask Dr. Power what he thinks about the vegetarian diet. I have known well two people who are vegetarians, one is a girl of 22 who for ten years has lived exclusively on a vegetarian diet, never using milk, eggs or meat. She is of normal weight and in exceedingly good health. The other case is that of a woman 55 years of age, who for seven years has lived on this sort of diet. How can you account for the nourishment from fruit and vegetables if in them there are not to be found the required number of calories?

Langley Porter, San Francisco: This is one of the most important subjects that can be brought before the society, and I am sure that all of us are indebted to Dr. Power for his paper. The day has passed by when the magic potion is all that is demanded of the physician. My work among children brings me to lean heavily upon this knowledge which Dr. Power has given you. The modern feeding of children is based upon a knowledge of the caloric value of foods and upon the caloric needs of infants and children, and certainly the proper feeding of adults must necessarily be based upon the same principles. In this connection there are a few things which one must learn, and Dr. Power tries to give us surcease from the pain of learning. I wish to congratulate Dr. Power for the simple and ingenious grouping which he has given us tonight. Having these in mind, and having the simple needs of the individual per pound, we succeed in our efforts to use rational therapeutics. I think Dr. Power's plan is excellent, but not so very much better than the old plan which we all have had in mind of valuing the individual's caloric needs by

his weight. There are one or two points which Dr. Power has made which ought to be rubbed into every physician most thoroughly—one is that more typhoid patients are buried from starvation than from any other single cause; another is that although we may know the needs of a normal body, the needs of the sick body we do not always know, and this is a matter to be determined by investigation. I think more stress should be laid on the investigation of the stools as a means of checking up the body needs. This is true in the cases of sick individuals for you may give the patient the adequate number of calories and that many of these calories may be passed into the world with the feces. I believe the time is coming when every physician must be thoroughly conversant with the method of determining food waste in the stool.

Wm. C. Voorsanger, San Francisco: Dr. Power has been quite exhaustive in dealing with this subject and I agree with the remarks which both he and Dr. Porter have made. I am afraid that a good many of us are rather deficient in our knowledge of the caloric value of food stuffs, or we allow ourselves to forget these things. We are very much tempted to tell a patient not to eat potatoes but to eat a certain amount of meat, and we do not prescribe how much. We should look upon diet as we do upon medicine. We should prescribe doses. I think we are also going to provide doses of exercise, we are going to outline just what is going to be done in this way. To my typhoid patients I give a pretty full diet—I never starve them any more. I do not believe that it is necessary to actually figure out caloric values; you can do that in hospitals but you cannot in private houses, you cannot tell people that they should take so many calories of food. The principle which Dr. Power wishes to enunciate to-night is a very wholesome one and we should take it up here and make up our minds that we are going to feed our patients on a more scientific basis than we have in the past.

Francis Williams, San Francisco: I presume that Dr. Power has it in mind to put this data on a card with a few additional explanatory remarks, in such a way that it can be left with patients for their use. We must have something definite like this that can be passed out to the patient, just as in obstetrical cases you give your patient a list of the things you want provided and the things you want done, and thus they are done. If this data were on a card our patients could be taught to use it, especially after we become more familiar with it ourselves. We hear all the time about people who can live on a meat diet or a vegetable diet, but it takes years and years before the result of such living can be determined. Often the results are not evident until the fortieth or fiftieth year. In cases where we try to reduce obesity we often find patients who assure us they are light eaters, and yet it is difficult to make any change in them, and the only explanation I can give for such cases is that there is also light expenditure of energy, they take less and they spend less.

A. C. McKenny, San Francisco: The paper which Dr. Power has just presented is a very interesting one, it is simple and attractive. I was much interested in the remarks made by Dr. Porter in regard to the examination of the feces. Many times I have found that patients were taking the proper number of calories but expelling practically all of it and deriving no benefit. The examination of feces gives us more definite information than many of us realize. I am heartily in favor of keeping up work of this kind.

H. D'Arcy Power: First, in regard to the value of vegetarian dietaries, it must be clearly understood that there is a minimum somewhere about 1500 calories per day that cannot be diminished without tissue loss. Many of these crank dietaries, doubtless occasionally suitable to certain abnormal organisms, make up at one end what they are de-

ficient of at another; thus as stated the green vegetables and raw fruit provide but so little nourishment, that in normal dietaries their presence can be neglected, but some of the natural food fanatics, while seemingly living on large quantities of these substances are really maintaining themselves on nuts whose oil content gives them a high caloric value. In a general way our appetites are so attuned that the higher the caloric value of a food, the less we naturally desire of it, thus pure fats (butter) and pure sugar (candy) are normally taken in relatively small quantities. Reference was made to the food requirements in sickness. In the fevers these are usually increased rather than diminished. In obesity where the weight is often dependent on water absorption rather than stored fat, the caloric requirements are low. Reference was made to a card of quantitative values and directions. I have long used such an one based on the weight, caloric relation; I am now replacing it by one dependent on the height. I have never had any difficulty in using it, or in getting my patients to follow its indications.

SOCIETY REPORTS

ALAMEDA COUNTY.

The regular meeting of the Alameda County Medical Association held September 21st, 1910, was devoted to internal medicine.

The following program was in charge of Dr. Edward Von Adelung:

I. Report of a case of Splenomegaly with Autopsy Findings; 10 minutes. Dr. W. A. Sawyer of Berkeley.

II. Pathological Demonstrations; 10 minutes; Malignant Endocarditis, Gastric Sarcoma. Dr. L. H. Briggs of Oakland.

III. Presentation of a Case of Hookworm Disease (Uncinariasis), patient, ova, worms, blood; 15 minutes. Dr. Edward Von Adelung and Dr. F. H. Bowles of Oakland.

IV. Important Tropical Diseases (lantern illustrations by Dr. W. A. Clarke); 30 minutes. Dr. Creighton Wellman of Oakland.

V. Blood and Urinary Cultures as Diagnostic Aids; 15 minutes. Dr. J. J. Hogan of Vallejo.

VI. Exhibition of X-Ray Negatives (X-Ray treatment of Luekaemia). Dr. L. P. Howe of San Francisco.

These subjects brought out the largest attendance so far this year. Owing to the lateness of the hour and that important business had to come before the society, there was no discussion.

The society extended a vote of thanks to Dr. Von Adelung and the gentlemen who participated in this splendid program.

P. S. NUSBAUMER,
Secretary.

RIVERSIDE COUNTY.

The first meeting of the Riverside County Medical Society following the summer vacation was held last evening at the Victoria Club. The President, Dr. A. W. Walker, acted as host for the evening. There were but twelve members present, but in spite of the small attendance the meeting was a very enthusiastic one.

The Society went on record as favoring medical inspection of schools by a regular inspector and such a recommendation will be forwarded to the Board of Education. It was also decided that we should place anti-tuberculosis Christmas stamps on sale in Riverside during the holiday season.

The paper for the evening was read by Dr. C. Van Zwalenburg on "Distention as a Result of Obstruc-

tion in Cavities Lined with Mucous Membrane."

Following the banquet the Society adjourned about midnight to meet again the second Monday in November.

GEORGE E. TUCKER, M. D., Secretary.

SAN BERNARDINO COUNTY.

Redlands, Cal., Oct. 15, 1910.

The San Bernardino County Medical Society resumed its weekly meetings the first Tuesday evening in October. The subject of the evening was "Vaccination," which was discussed with especial reference to the enforcement of the State law which makes it compulsory for all school children to be successfully vaccinated. The society went on record as favoring the strict enforcement of the State law, and passed resolutions urging the school trustees and the teachers to co-operate with the medical profession in carrying out this necessary measure in preventive medicine.

The second meeting of the month was devoted to the consideration of the inspection and care of the teeth of all school children and the paper of the evening was presented by A. C. Cameron, D. D. S. This meeting was attended by the principals of the different schools and all of the dentists of the city. A plan is now under way whereby a room will be fitted up in one of the school buildings and each of the dentists of the city will in turn devote half a day each week to the inspection and treatment of the teeth of all children whose parents are not financially able to have this work done.

The third meeting of the month will be devoted to the subject of "Typhoid Fever," and the question of carriers will be the special phase of the question to receive attention.

The fourth meeting will be devoted to the subject of "Surgery," with a paper by Dr. Beckett of Los Angeles.

Beginning with the first of November the society will again take up the post-graduate work as outlined in the Journal of the American Medical Association, which has proven of great benefit the past year.

A new feature which the society is going to add this year is a publicity column in the local newspaper. With the co-operation of the City Board of Health and of the Redlands Anti-Tuberculosis League, the society has arranged for a definite space in one of the local newspapers to be given over to public health and sanitary matters. These articles will appear once a week and all matter will be passed on by a press committee of three from the County Society. It is hoped in this way to get the physicians to take an especial interest in matters of public health and sanitation, and at the same time to instruct the public in such a manner as to make the carrying out of public health measures easier.

The public generally are very much interested in health matters and are going to read something along health lines and it would seem that the wisest course would be for the medical profession to furnish them with the truth instead of letting them be misinformed by laymen.

GAYLE G. MOSELEY, Secretary.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held at the Moquelumne Club at Lodi, being entertained by the Lodi physicians with Dr. S. J. Hunkin of San Francisco as guest of the evening.

It being the first meeting held since the summer vacation closed, the attendance was unusually large and all the members showed a marked interest in

Society affairs which augured well for the Society for the coming year.

Dr. Hunkin read a paper on "Polio-Myelitis," giving very extensively symptomatology, treatment and affect of the disease as well as the surgical correction of the deformity left as the result of the disease. The paper proved to be one of unusual interest and the same subject would be discussed next month by Dr. Langley Porter of San Francisco.

The Committee on Ethics recently mailed to all the members the copy of the enclosed letter and are endeavoring by every possible means to stamp out the practice of abortion.

B. F. WALKER, Secretary.

Stockton, Cal., September 23, 1910.

Dr. B. F. Walker, Stockton:

Dear Doctor:—About a year ago, as you are aware, our Medical Society incorporated. One reason for doing so was, that we might adjust our affairs in a more business-like manner and handle cases which come before us with a greater facility. We, the Committee on Ethics have recently had brought to our attention the fact that certain members of our Society are doing abortion work. Such conduct is a disgrace to the medical profession and we are going to use every effort at our command to root it out. Already certain members have been asked to appear before us to answer certain informal charges which have been preferred against them. If they are innocent it will be an easy matter for them to prove their innocence, and they will be glad of the opportunity to vindicate themselves. If they can not answer satisfactorily our report will be taken before the Board of Directors and formal action will be taken against them.

This is not a personal matter with us, but as members of the Committee on Ethics we have been instructed to do away with this and other dishonorable practices in our midst to the best of our ability.

We want the help of every innocent member of the Society, and with that help we will raise the standard of our profession here.

JAMES P. HULL,
CHARLES REES HARRY,
A. M. TOWER,
W. J. BACKUS,
E. A. ARTHUR,

Committee on Ethics.

SANTA CLARA COUNTY.

The regular monthly meeting of the Santa Clara County Medical Society was held Wednesday evening, October 19, in the parlors of the St. James Hotel; Dr. J. J. Miller presided.

After the routine business of the evening was finished, Mr. Charles G. Titus, a member of the international committee of the Y. M. C. A., addressed the meeting on some phases of the Y. M. C. A. work of interest to medical men, showing many photographs of gymnasiums, swimming pools, etc., found in some of the well equipped buildings now in use in different cities. After Mr. Titus' talk the society, by unanimous vote, endorsed the movement now on foot in San Jose, to put up a properly equipped Y. M. C. A. building.

Dr. P. A. Jordan then presented a very instructive paper on "Some Borderline Cases of Ear Disease," being a discussion of some of the commoner ear troubles that are often treated by the general practitioner.

Dr. Wm. Simpson then presented a paper on "Diagnosis of Eye Diseases Without the Use of the Ophthalmoscope." This paper was also of great interest to the general practitioners present.

Dr. E. R. Wagner, president of the Santa Clara County Medical Society, is absent from the city visiting some of the eastern cities, and looking over some of the prominent eye and ear hospitals. Dr. Wagner also intends to take up some special studies in Europe, chiefly in Vienna.

Dr. D. A. Beattie, who has been ill for the past two weeks with a severe attack of bronchitis, has recovered sufficiently to leave town for a short while for rest and recuperation.

Cooper College Science Club.

The regular monthly meeting of the Cooper College Science Club was held on Monday, Oct. 3rd, 1910. The scientific program was as follows:

I. Exhibition of Medical Cases. Chas. Minor Cooper. Discussion—Drs. Shiels, Luttrell, Rixford, Alvarez, Sewall.

II. A Case of Tubercular Ulcer of the Leg Treated by Electrolysis and Zinc Chloride. E. C. Fleischer and H. H. Yerrington. Discussion—Drs. Rixford, Alderson, Cooper, Yerrington.

Refreshments were served at the close of the program.

California Academy of Medicine.

The regular meeting of the California Academy of Medicine was held July 26, 1910.

A paper was read by Dr. H. T. Sherman entitled "Rupture of the Liver, Intestinal Obstruction and Subphrenic Abscess Opening Into Left Pleura." This paper will be published in a later number of the Journal.

Dr. Howard Morrow presented a patient with Dermatitis Herpetiformis and Arsenical Pigmentation.

The last meeting of the Academy was held August 23, 1910.

Dr. W. B. Lewitt read a paper entitled "Report of Five Cases of Infantile Pyloric Stenosis Treated by Repeated Lavage." This paper may be published at a later date.

Dr. Kugeler read a paper reporting three cases of Carcinoma of the Esophagus.

These papers were discussed by the members present.

Notice!

The Register and Directory for 1910 was delivered in November.

Please look through your copy and advise us of any corrections or changes of address.

Please give us the benefit of your criticisms or suggestions for future editions.

BOOK REVIEWS

Ionic Surgery in the Treatment of Cancer. By G. Betton Massey, M. D. The A. L. Chatterton Co., New York, 1910.

The treatment of malignant growths by other means than excision has received considerable attention in recent years. Caustics, the thermo-cautery, X-ray, and radium have been tried and the indications for their use have been better understood. Treatment by ionization has been less extensively studied and consequently is less known so far as its efficacy is concerned. The experience of the author with this method is therefore all the more interesting particularly in view of the claims made for it. Passing over some of the first sections of the book which deal on the nature of malignant growths, the search for the possible cancer germs, the physics of the method, and operative details of ionic applications interest is arrested by the last part of the work which contains the case-histories of individuals treated by ionization. A close study of the histories impresses one most favorably in individual instances, but nevertheless the impression remains that the method has but a very limited application like other procedures which have been more carefully investigated. We do not wish to assume an incredulous attitude regarding the subject nor do we wish to discourage further study of the ionic treatment of cancers, but from the evidence presented by Dr. Massey it is clear to us that it is not destined to outshine other better known methods.

Symptomatic and Regional Therapeutics. George Howard Hoxie, A. M., M. D. D. Appleton & Co., 1910.

In view of the large number of materia medicas and works on therapeutics adorning our library shelves, the arrival of a new work leads us to investigate the author's excuse for his addition to the array. In his preface the author tells us that his work contains: "Material collected for the course in general therapeutics recommended by the Committee on Curriculum of the American Medical Association—a recommendation adopted also by the Curriculum Committee of the Association of American Medical Colleges. Inasmuch as the course forms a transition from the laboratory to the clinic, more attention is given to the discussion of the principles underlying the various methods of treatment than to an elaboration of the relative merits of the various drugs that have been recommended during the centuries of development of the art of healing." The author has succeeded in giving a rather detailed, and consequently, practical resumé of the methods of treatment in medical practice. The book can certainly be recommended to students, and likewise to practitioners looking for a simple and rational description of therapeutic methods.

R. B.

The Practical Medical Series, Vol. 3. The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, C. M., M. D., D. C. L., Albert H. Andrews, M. D., Gustavus P. Head, M. D. Series of 1910. The Year Books Publishing Co. Chicago.

This little book is one of a series of reviews and comes as the third volume. It is handily arranged and follows the same general lines as its predecessors. The field is well covered, the indices complete, both as to subjects and authors and the cuts and printing are good.

All interested in the special subjects of eye, ear, nose and throat can keep abreast of the times most readily by such a work, and I therefore heartily recommend it to the profession.

The Practical Medicine Series.—Volume V, Obstetrics. Edited by Joseph De Lee, A. M., M. D., Professor of Obstetrics, Northwestern University Medical School. The Year Book Publishers. Chicago, 1910.

This volume, which is one of the well known series, deals with the year's progress in obstetrics. The name of the editor is sufficient guarantee for the thoroughness of presentation. For those who have neither the inclination nor time to follow the literature scattered through numerous journals this book, containing as it does, a resumé of both scientific and purely practical aspects of recent advances in obstetrics, fulfills a distinct need.

In the section on the Physiology of Pregnancy we note references to some points of much interest. The question of early diagnosis of pregnancy still attracts the attention of investigators notwithstanding a clear recognition of the subjective and objective phenomena. Withal, the certain diagnosis often remains difficult and uncertain in the beginning. Naturally under these conditions obstetricians would welcome any method which would make early recognition definite. The work of Fieus and Mauriac seems to be a step in this direction. From a study of the toxic action of the villi the observers claim to have demonstrated the formation of an antibody which may be revealed by the action of the complement in the haemolytic test. The authors apply the haemolytic test with an antigen made from villous masses derived from a two months' human ovum. With this and similar antigens they tested 55 pregnant women and obtained positive results in every case of pregnancy of 2 or 3 months' duration. The findings were negative in all cases under one month and over four. The hope may here be expressed that more work will be carried out along these lines and that something of definite practical value may come from it.

We also note reference to the interesting investigations of L. Loeb on the functions of the corpus luteum in relation to decidual formation. This worker shows most conclusively that the internal secretion of the luteal body sensitizes the uterine mucosa so that normal or mechanical stimuli induce decidual formation. The bulk of experimental work having a bearing on obstetrics relates, however, to eclampsia. Since Lubarsch and Schmorl placed this condition on a clear anatomico-pathological basis there has been much speculation as to the mechanism by which the intoxication is brought about. Some believe that the primary causative factor is resident in the fetus, others in the uterus or placenta, while a few like Ewing still maintain that it is in the kidney. Fehling supported the fetal theory before the Congress at Giessen, claiming that the fetus possessed a metabolism entirely independent of the mother and formed within its tissues haemoglobin, bilirubin, gall and glycogen. A placental origin finds considerable support in the researches of Polano, Schmorl, Freund and others. It has been shown that decidual cells are present in various organs of the body in this disease; and it is believed that the presence of these cells brings about a systemic maternal reaction resulting in the formation of antibodies, called syntiolysins. When present in excessive quantity it is assumed that the body is unable to synthesize them, a condition which leads to eclampsia. The discovery of placental ferments capable of splitting albumen, dissolving red corpuscles, and oxidizing various substances has brought the placenta in still greater prominence during the last year. The results of all this work is briefly summarized in the volume.

In the department of practical obstetrics it is evident from a glance through this little book that the center of interest lies in Caesarian section, vaginal, intra-peritoneal, and extra-peritoneal. The indications for this operation have been much extended in recent years so that it is now utilized not only

in cases of contracted pelvis, but in placenta praevia, eclampsia, and less frequent complications. Judging from the literature the results have been most satisfactory, both maternal and infant mortality having been considerably reduced in certain classes of cases. From a review of last year's literature on hebostectomy the impression is gained that less enthusiasm has been shown for the procedure, although Williams of Johns Hopkins University in reporting 25 cases expresses a very favorable opinion of the operation.

The perusal of this excellent résumé of the year's progress in obstetrics leaves the very pleasant impression that scientific methods now more than ever before overshadow the empiric practice of a few years ago and that now once and for all time obstetrics takes its place in scientific accomplishment beside its sister specialties, general surgery and gynecology.

Dislocation and Joint Fractures. By Frederic J. Cotton, A. M., M. D. Publishers, W. B. Saunders Company, 1910.

In this volume of 650 pages, Dr. Cotton has adhered closely to the title, so that no mention is made of fractures of the shafts of bones. As a matter of fact, the omission of shaft fractures is of little importance, for he has covered the subject of fractures in and near joints so thoroughly that the principles involved can readily be applied to all fractures, excluding of course a consideration of fractures of the skull, which is really a department of brain surgery. It is decidedly refreshing to find that the book is not filled with old illustrations, so many of which are out-of-date and incorrect. The present volume has 1201 illustrations of which 830 are from drawings by the author. Dr. Cotton deserves much praise for his skill as an artist—his work in that respect is well known to those who have seen Scudder's "Treatment of Fractures." Many roentgenographs have also been utilized to illustrate the text and the author has not hesitated to retouch them when necessary to bring out details. More important than all, however, the author has succeeded in his "Attempt to make the illustrations much more integrally a part of the text than has been the rule in medical book-making."

The experience of the author has been extensive, yet he is modest in his opinions. One of his statements in his Introduction should be of value to those who are apt to be routinists: "There is bound to be a broadening recognition of the fact that each fracture is a mechanical problem in itself, so far, at least, as reduction is concerned. The more we study fractures and luxations, the more we see how definitely they fall into series of roughly constant types; but these types are not constant in detail, and the ancient custom of treating a fracture with a given form of reduction, or putting it up in A's or B's splint, is no longer adequate practice." Cotton's statement that "Non-union usually means delayed union," might have been questioned a number of years ago, but is true to-day because the practitioner knows better how to care for fractures.

The question of operative treatment of fractures is an important one, and as Cotton's views in this matter are in accord with those of many of the best surgeons in this country, they deserve to be quoted as fully as space will permit: "There is some danger that such operating may get to be too common; already a good deal of unnecessary work is being done, practically by rather inexperienced men. I am not one of those who believe in indiscriminate operating in simple fractures—certainly it is not called for now, nor in the future do I expect that it will be. I do believe, however, that there is a large field of usefulness for those whose experience renders such work reasonably safe and certain, in order to remedy, (or, still better, to prevent) most of those innumerable cases that have been a reproach to the

profession—excused in the past because in the past no better results were obtainable, to-day no longer excusable." "Operations should, as a rule, be postponed for a week or ten days from the date of injury; at this time clot organization has begun, and the chance of sepsis is less." There are also many other references to operative treatment in the consideration of special fractures and dislocations. Cotton advocates the simplest means of fixation—kangaroo tendon, nails or staples, but does not favor plates, screws or intramedullary splints. "The less foreign material the tissues have to adapt themselves to, the better." In the employment of drills and screws driven through skin and soft tissues into bone for fixation purposes, the reviewer differs from Cotton. There are many cases of osteomyelitis and infection of the soft tissues following the application of Parkhill's or Lambotte's clamps or other similar apparatus and until we have some positive means of preventing sepsis from external-internal apparatus, we should not employ it. The author has been careful to give each subject its due measure of importance and does not seem to be a faddist in any way. The chapters on dislocations and fractures of the shoulder and elbow are particularly well written. In regard to gunstock deformity of the arm, Cotton emphasizes the point that it is due to a fracture above the condyles of the humerus or to an epiphyseal separation and that it does not result from fracture of either condyle alone.

The book will not be particularly useful to students except for reference, but for the general practitioner and the surgeon it is an authoritative work and will rank with the best we have.

W. I. T.

A MENACE TO THE PUBLIC WELFARE.

Washington, D. C., April 28, 1910.

The alarming extent to which habit-forming drugs are used and the various channels through which they reach the public.

United States Department of Agriculture, Division of Publications. Jos. A. Arnold, editor and chief.

In its effort to protect the innocent public against the insidious effects of preparations containing drugs injurious to health, the United States Department of Agriculture has issued another Farmers' Bulletin treating on the subject so nearly connected with public health.

Farmers' Bulletin No. 377, "The Harmfulness of Headache Mixtures," was issued in September, 1909, and 70,000 copies have been distributed to those interested in the subject; now Farmers' Bulletin No. 393, "Habit-Forming Agents: Their Indiscriminate Sale and Use a Menace to the Public Welfare," giving the results of recent investigations by the department, has just been issued as a warning to mothers, invalids, and users of medicated soft drinks, of the dangerous contents of many of the infant syrups, so-called remedies, and soft drinks containing cocaine, caffeine, etc.

It is almost unbelievable that any one for the sake of a few dollars would concoct for infant use a pernicious mixture containing cocaine, but several such mixtures have been found and their names published, together with a list of remedies intended for infants and containing morphin, codein, opium, cannabis indica, heroin, which are widely advertised, and are accompanied by the assertion that they "contain nothing injurious to the youngest babe," and that "mothers need not fear giving them it as no bad effects come from their continued use," while as a matter of fact numerous instances are on record of babies being put to sleep never to wake again, or, where they did not succumb, the more serious effect of infant drug addiction was produced.

Yet the majority of mothers ignorant of these

facts continue the use of these poisons which at least must undoubtedly leave their impression on the delicate organisms of infants and induce tendencies which may develop into the evil habit of drug addiction.

The bulletin contains a list with a photograph of the "original packages" of some of the soft drinks containing caffeine and cola leaf extracts, to which it is not uncommon to find persons addicted. It also mentions some of the harmful nostrums advertised as cures for asthma, catarrh, cold, coughs, consumption, epilepsy, and the tobacco habit, and states that some physicians in their prescriptions in treating these diseases and in attempting to cure the "drug habit" itself, often prescribed the very remedies that have produced the conditions which it is proposed to relieve.

This bulletin can be secured by writing to the Secretary of Agriculture, Washington, D. C., to any Senator, Representative, or Delegate in Congress, or it can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at five cents per copy.

NOSTRUMS IN A NEW GUISE.

Some time ago an advertisement of an alleged mineral water, or rheumatism water, was sent to the Journal, and in the absence of the editor it was inserted for one issue. The statements appeared to be a little peculiar, so the matter was referred to a chemist of national reputation for his opinion. It should have been published long ago, but the letter got mislaid. In part he wrote as follows:

"I have read the advertisement of the so-called mineral water which appeared in your Journal, and I think that it is the 'limit.' It is, of course, not a mineral water at all, but instead a rank nostrum. The claims as to its curative value are extreme. The statement of composition is intended, evidently, to hide its real nature. The first substance mentioned, 'diathylendiamin,' is the chemical name for 'piperazine.' With the second substance mentioned I am not familiar, but should not be surprised if they are trying to refer to 'phenacetin' in such a way that physicians shall not understand them. Chemically, 'phenacetin' may be called 'anido-acet-para-phenetidin,' and it is quite possible that they are trying to refer to this in a disguising way. What 'phonetidium' is, I don't know.

"This product is a good illustration of a general tendency in patent and proprietary medicines. During recent years, patent medicines have come into disrepute with the public—largely, I think, through the exposures in Collier's Weekly. As the result of this, 'cargon' and its thousand or more imitations have been an immense success. 'Cargon,' as you know, is claimed not to be a patent medicine, but instead a 'simple remedy.'

"As the public is becoming suspicious of patent medicines, so the physicians have come to distrust the proprietary remedy; and, as a result of this, manufacturers are no longer putting up typical proprietaries, but instead are selling so-called ethical pharmaceutical preparations which they try to make the physicians believe are not subject to the criticisms which have been made against the proprietary nostrums. Your 'mineral water' is an example. Physicians would hesitate to use a solution of piperazine and something else—but in the guise of a mineral water they are liable to consider it all right.

"The rheumatism water is evidently a sister of Lehn & Fink's piperazine water, referred to by Solman in his article on the 'Aims of the Council' (see J. A. M. A., Feb. 29, 1908, page 704)."

ARMY MEDICAL CORPS EXAMINATIONS.

The Surgeon General of the Army announces that the first of the preliminary examinations for the appointment of first lieutenants in the Army Medical Corps for the year 1911 will be held on January 16, 1911, at points to be hereafter designated.

Full information concerning the examination can be procured upon application to the "Surgeon General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between twenty-two and thirty years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, shall be of good moral character and habits, and shall have had at least one year's hospital training or its equivalent in practice after graduation. The examinations will be held concurrently throughout the country at points where boards can be convened. Due consideration will be given to localities from which applications are received, in order to lessen the traveling expenses of applicants as much as possible.

The examination in subjects of general education (mathematics, geography, history, general literature, and Latin) may be omitted in the case of applicants holding diplomas from reputable literary or scientific colleges, normal schools or high schools, or graduates of medical schools which require an entrance examination satisfactory to the faculty of the Army Medical School.

In order to perfect all necessary arrangements for the examination, applications must be complete and in possession of the Adjutant General on or before January 2, 1911. Early attention is therefore enjoined upon all intending applicants. There are at present seventy-six vacancies in the Medical Corps of the Army.

NEW MEMBERS.

McCoy, A. D. S., Pasadena.
Hromadka, A. B., Ocean Park.
Loomis, M. L., Venice, Cal.
Levengood, W. H., Ocean Park.
Smith, Wm. S., Ocean Park.
Thomas, Wm. S., Ocean Park.
Schoff, C. E., San Francisco.
Null, J. G., San Francisco.
Emmal, F. S., San Francisco.
Hamelin, F. A., San Francisco.
Kearney, P. A., San Francisco.
Nakabayashi, M., San Francisco.
Breyfogle, E. S., San Francisco.
Wrinkle, G. S., San Francisco.
Sullivan, J. F., San Francisco.
Kurozawa, K., San Francisco.
Gouguet, J. L. E., Sisson.
Lewis, C. E., Yreka.
Tebbe, Wm. E., Weed.
Mortensen, W. S., Palms.
Dr. S. L. Kistler, Los Angeles.
Dr. Alexander Jardini, Los Angeles.
Dr. Atticus G. Haywood, Los Angeles.
Dr. E. Henderson, Pomona.
Dr. James R. Cowan, Los Angeles.
Dr. Henry O. Eversole, Los Angeles.
Dr. C. W. Norton, Los Angeles.
Dr. John L. Pomeroy, Monrovia.
Dr. Luis F. Alvarez, Los Angeles.
Dr. Albert J. Scholl, Los Angeles.
Dr. C. A. Wright, Los Angeles.
Dr. A. F. Wagner, Pasadena.
Dr. S. D. Brooks, Los Angeles.
Dr. Leon W. Mansur, Los Angeles.
Dr. J. J. Van Kaathoven, Los Angeles.

DEATHS.

Selzer, Edward, San Francisco.
Ellis, T. E., Elsinore.
Hewetson, John, Riverside.
Witter, G. F., San Jose.
Huckins, J. W., San Francisco.
Poaps, Allen Perry, San Francisco.
Sherman, Carlos C., Colton, Cal.

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(SEE PAGE X)

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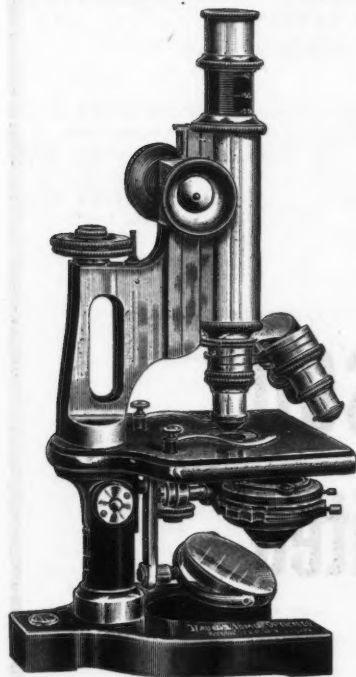
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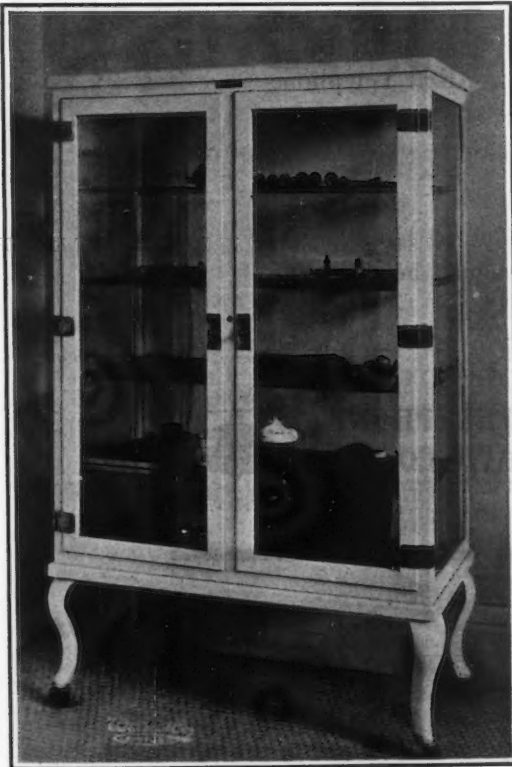
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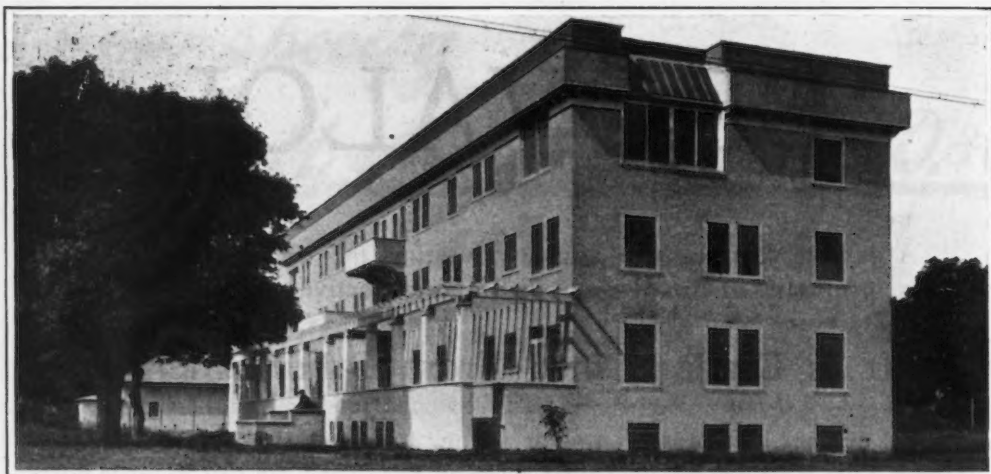
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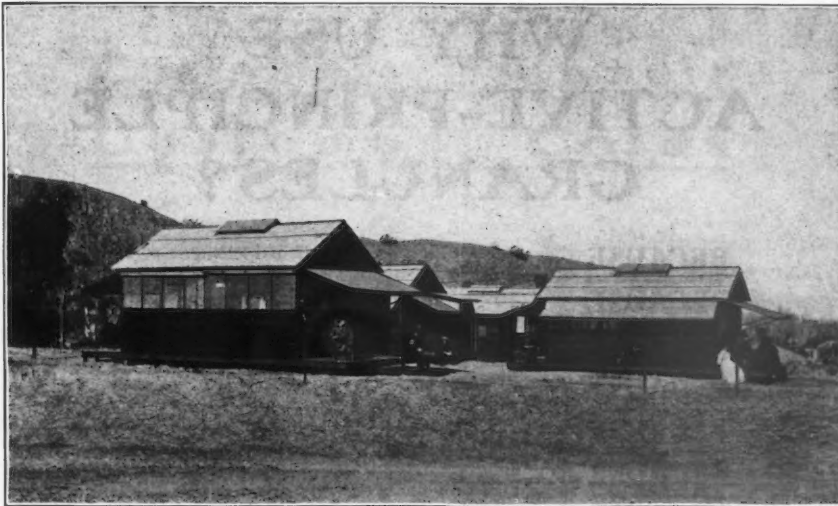
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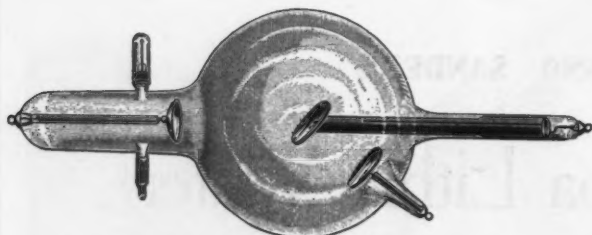
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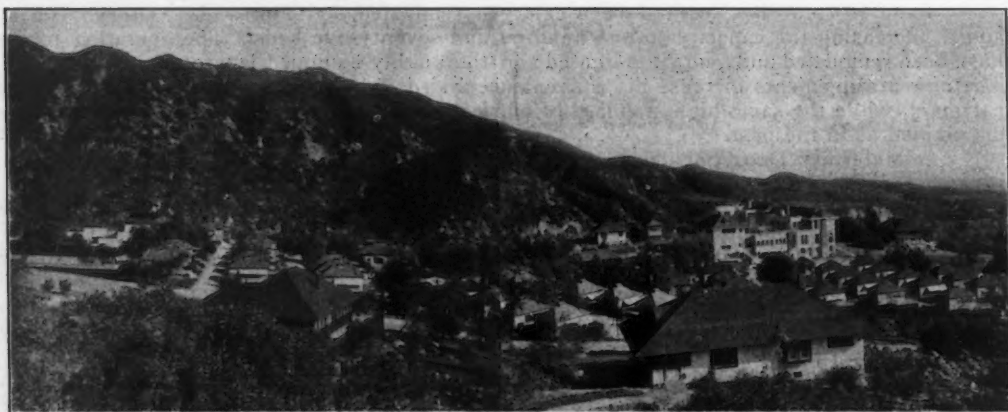
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